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Socio-Economic Characteristics and Conservation Interests

**Background
Report III**

Lancaster
Sound
Regional
Study

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Lancaster Sound Regional Study

Background Report No. III

SOCIO-ECONOMIC CHARACTERISTICS AND CONSERVATION
INTERESTS OF THE LANCASTER SOUND REGION

A History of Human Occupation

by K. Harper, Consultant, Ottawa

Socio-Economic Characteristics

by K. Harper, Consultant, Ottawa

Conservation Interests

by G.G. McLean, Lands Directorate,

Department of the Environment.

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GENERAL INTRODUCTION

This report is one of five background reports prepared as part of the current study of marine and land-use options (Green Paper) for the Lancaster Sound region in the Northwest Territories. These reports are based on existing data, and together represent a body of information on which further discussion, analysis, and planning can be based. Information topics were selected on the basis of their relevancy to a particular resource use, or to provide a regional perspective of combined current or potential resource uses.

These reports and accompanying maps are being made available at this time in order to foster a thorough discussion by interested organizations, residents of the Lancaster Sound region, and concerned members of the public. Comments arising from the public discussion and any new information will be incorporated into a final report and map set to be published later.

The study of the Lancaster Sound region is being co-ordinated by the Department of Indian Affairs and Northern Development and carried out in co-operation with the Departments of Energy, Mines and Resources, Environment, Fisheries and Oceans, Transport, and the Government of the Northwest Territories.

Copies of other background reports are available by writing to:

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Other Background Reports

Report I: Selected Physical Characteristics

Report II: Selected Biological Characteristics

Report IV: Non-Renewable Resources and Transport

Report V: Jurisdictions and Legislation

A History of Human Occupation

by K. Harper

INUIT CULTURE PERIODS

Inuit and their ancestors have occupied Arctic Canada for over four thousand years. The earliest ancestors of the present-day Canadian Inuit crossed from Siberia to North America, across the Bering Strait land bridge, between eight and ten thousand years ago.

The earliest Eskimo* culture that archaeologists have identified, the Arctic Small Tool tradition, developed in Alaska and spread east through the central and eastern Canadian Arctic to reach Greenland, the Ungava Peninsula, and the Keewatin. Its most well-known variant, the Pre-Dorset culture, was characterized by small, delicate stone tools, semi-subterranean winter houses, and summer habitations of skin tents. Weapons were the toggling harpoon, spear, lance, and bow and arrow, used in quest of caribou, seal, fish, birds, bears, muskoxen, and wolves. These

* The historic inhabitants of Arctic Canada are referred to as Inuit. However, because the various prehistoric occupants of the Arctic are known in the literature as "Eskimos" this term is used where appropriate to the particular circumstances (Freeman, 1976, p. 20).

people were highly mobile and lived in groups of a few families in small settlements. Within the Lancaster Sound region, pre-Dorset culture sites have been identified on Cornwallis Island and in Eclipse Sound.

In the eastern Canadian Arctic, about 800 BC, the Pre-Dorset culture evolved into a new and distinctive culture, the Dorset culture. The Dorset people, seasonally nomadic, travelled in small bands. They lived in rectangular, partly-subterranean houses in winter, skin tents in summer. Former sites indicate settlements of from 3 to 15 houses. Seals, walrus, caribou, fish, and birds were their quarry. During the Dorset period, a distinctive artistic style developed; small, delicate carvings, realistic or abstract, were made in ivory, antler, and bone. In their legends, Inuit of today retain vivid memories of the Dorset people as the Tuniiit or Tunirjuat. The Dorset culture survived until about 1300 AD, perhaps longer in some parts of the Arctic. Dorset culture

archaeological sites are found on southern Devon Island, Cornwallis Island, the east coast of Somerset Island, Eclipse Sound, and Navy Board Inlet.

Between 900 and 1300 AD, waves of immigrants from Alaska displaced and eventually replaced the Dorset culture. These newcomers were Eskimos of the Thule culture. Migrating along the arctic coast, they probably travelled by way of Parry Channel and Lancaster Sound, through the High Arctic islands, to reach northwestern Greenland by 1100 AD. Their culture was dependent on the exploitation of the bowhead whale, and whalebone litters their archaeological sites. Caribou, seal, walrus, birds, and fish were also used. People lived in larger villages of from 6 to 30 houses, each constructed of stone slabs and a whalebone framework covered with sod. Snowhouses were used as temporary dwellings in the winter, skin tents in the summer. This culture was classically Eskimo, and survived until approximately 1750 AD. In the Lancaster Sound region, Thule culture sites are found on the south coast of Devon Island, Cornwallis Island, Somerset Island, Admiralty Inlet, Eclipse Sound, and Navy Board Inlet.

The period between 1650 and 1850 AD, a time of climatic deterioration termed the Little Ice Age, forced people to withdraw from the High

Arctic islands. As the climate cooled, northern seas became more ice-covered and, as a consequence, the range of the bowhead whale was restricted. The result was the virtual collapse of the Eskimo hunt for the baleen whale and the abandonment of large, permanent villages. A more nomadic way of life developed, in which small groups of people depended on the exploitation of seals and walrus. This change in lifestyle, beginning in the eighteenth century, marked the end of the Thule culture and the beginning of its evolution into modern Inuit culture.

EXPLORATION AND SOVEREIGNTY

In 1616 Robert Bylot and William Baffin, after a voyage north along the Greenland coast, discovered the entrance to Lancaster Sound, then returned south along the coast of Baffin Island. In 1818 John Ross and William Edward Parry were sent by the British Admiralty to search for a northwest passage by way of Baffin Bay. Although they entered Lancaster Sound, Ross felt that it was only a small inlet enclosed by mountains and did not continue through.

Parry, travelling separately but under Ross's command, had not penetrated as far into Lancaster Sound and had not seen the mountains

that Ross claimed blocked its end. He felt that the sound offered the best possibility of a passage westward and was, therefore, sent out in 1819 to examine it further. Tracing Ross's route northward, he entered Lancaster Sound, then kept close to the Devon Island coast until he reached Maxwell Bay. Turning south to explore Prince Regent Inlet, he was forced back by ice conditions before reaching Cape Kater. He continued westward in Lancaster Sound and discovered Cornwallis, Bathurst, Byam Martin, and Melville islands, before wintering at Winter Harbour on Melville Island. The following summer he explored the south shores of Barrow Strait and Lancaster Sound, charted the north shore of Somerset Island, and discovered the entrances to Admiralty Inlet and Navy Board Inlet. He returned to Lancaster Sound in 1824 and wintered at Port Bowen in Prince Regent Inlet. The following year his ship, the Fury, was driven ashore at Fury Point, Somerset Island, and abandoned.

In 1829, John Ross was back, with his nephew James Clark Ross, on a privately-sponsored venture to discover a northwest passage. They entered Lancaster Sound and Prince Regent Inlet and wintered at Felix Harbour on Boothia Peninsula, remaining there for four winters because of ice conditions.

In 1833 they abandoned ship and, in one of the ship's boats, made their way out of Prince Regent Inlet to Lancaster Sound, where they were rescued by the whaler, Isabella.

The ill-fated expedition of Sir John Franklin, the last northwest passage expedition sponsored by the British Admiralty, entered Lancaster Sound in 1845, circumnavigated Cornwallis Island and wintered at Beechey Island. In 1846 the expedition was beset by ice north of King William Island, where it remained until 1848, by which time Franklin had died. The last survivors of the expedition perished on Adelaide Peninsula. From 1847 until 1880, numerous expeditions were sent in search of the missing Franklin expedition, many by way of Lancaster Sound. Many of these attempts were combined with whaling ventures. These voyages were meticulous searches for any trace of the missing expedition and added much to existing knowledge of the Lancaster Sound region.

It was not until the present century that the Northwest Passage was finally navigated. The Norwegian, Roald Amundsen, entered Lancaster Sound in 1903 and travelled via Peel Sound to King William Island where he spent two winters at Gjoa Haven, named for his ship, before completing the passage.

The first Canadian government expedition to the High Arctic took place in 1904 when A.P. Low, in the Neptune, entered Lancaster Sound, landing at Beechey Island and Port Leopold, and stopping at Pond Inlet on his return south. Low's report contained information on physical geography, the Inuit population, whaling, navigation, and biology.

In 1906 the Canadian government dispatched Captain Joseph Bernier on the Arctic to take possession of the Arctic Islands in the name of Canada, and to collect customs dues from whalers. He entered Lancaster Sound, then headed south through Navy Board Inlet and Eclipse Sound to visit the Scottish whaling station at Albert Harbour. Returning north, he pushed through Barrow Strait, taking possession of many islands, and finally reaching Melville Island. On his return he landed at Beechey Island, then entered Admiralty Inlet before returning to Albert Harbour where he wintered. In 1908 Bernier was back in the High Arctic and wintered on Melville Island. The following year, on his return to Baffin Bay, he visited the whaling station at Pond Inlet. In 1910, on his third voyage, Bernier explored westward as far as Melville Sound, then wintered at Arctic Bay. From there, winter sled parties

explored Admiralty Inlet and Brodeur Peninsula. The following summer, he surveyed the west coast of Brodeur Peninsula before returning south. Bernier's three expeditions marked the beginning of Canada's official interest in the High Arctic. For the next decade the Lancaster Sound region was virtually forgotten by all except traders, until the Eastern Arctic Patrol was initiated in 1922.

THE WHALING ERA

In the early nineteenth century, the British whaling fleet expanded into Baffin Bay. A year before Ross and Parry had discovered the entrance to Lancaster Sound, two British whaling vessels had crossed Baffin Bay to the Canadian shore. Three years later, in 1820, a fleet of six vessels followed John Ross's route north along the Greenland coast and crossed the "North Water" to the Canadian side. At least one, the Cumbrian of Hull, sailed 130 km into Lancaster Sound. This small fleet returned south as Ross had done, along the coast of Baffin Island. This single-season, counter-clockwise circuit of Davis Strait and Baffin Bay quickly became the established pattern of whaling voyages to the far north every year that Melville Bay was passable. It was dominant until 1860 and remained important until the turn

of the century.

In the mid-1800s, many whalers were involved in the search for the missing Franklin expedition. As part of that search, they extended the whaling grounds well into Lancaster Sound and south into Prince Regent Inlet. However, most contact between whalers and Inuit occurred in the area of Pond Inlet, many whalers preferring to exploit the less hazardous waters east of Bylot Island. A few voyages of the latter half of the century deserve special mention. In 1854 John Gray, on the Eclipse, had followed the rest of the whaling fleet to Pond Inlet, but continued westward and discovered Eclipse Sound. In 1865 Brown and Philpots, on the Queen, combined whaling with exploration; they whaled in Lancaster Sound, Navy Board Inlet and Prince Regent Inlet, explored the east coast of Devon Island, and wintered at Philpots Island. In 1872, William Adams on the Arctic surveyed Admiralty Inlet and entered and named Adams Sound and Arctic Bay. The following year he whaled in Lancaster Sound, Admiralty Inlet, and Prince Regent Inlet; he killed 27 bowhead whales in the Lancaster Sound region that year.

Whaling had a profound impact on the Inuit population of the area. First contacts undoubtedly resulted in informal barter, but later more intensive and regular interaction developed. The material goods the whalers provided were greatly desired and included major items such as metal, tools, guns, and whaleboats. Of great importance too were carcasses of whales, flensed or unflensed. Intense whaling in Lancaster Sound and Pond Inlet resulted in many whale carcasses being washed up on shores where foxes, bears, and man could use their blubber and meat; the Inuit were also able to hunt the animals that fed on the carcasses. As early as 1823, the crew of the Cumbrian, cruising the floe-edge off Pond Inlet, noted the carcasses of hundreds of flensed whales. This by-product of the whaling industry, carried by marine currents, probably had a strong influence on Inuit settlement patterns. Inuit also salvaged wood from the wreckage of whaling ships for use as fuel and material to use in construction, particularly of sleds.

Inuit were employed casually in whaling tasks in the Pond Inlet area during the summer whaling seasons, but regular and long-term employment

was inhibited by the shortness of the season and by the fact that, for much of it, the ships and the Inuit settlements were separated by the land-fast ice. Employment was, therefore, unpredictable until the establishment of shore stations in the early 1900s.

By the end of the nineteenth century, the bowhead whale population had been severely depleted. To ensure a profit, whalers were forced more and more to augment their catches by hunting seals, walrus, and beluga whales, and by trading with the Inuit, particularly for bear skins and narwhal tusks. Still, there were those willing to take a chance on the industry. J.M. Mitchell was one; he established the Dundee Pond's Bay Company in 1902. The following year, veteran arctic whaler James Mutch sailed Mitchell's vessel, Albert, north. Mitchell's plan was to keep the vessel permanently in the Arctic at a harbour near Pond Inlet which became known as Albert Harbour, the first shore station in the High Arctic. In 1908, Mutch and some associates from Peterhead formed their own company, the

Albert Whaling Company, and purchased the vessel from Mitchell. The company survived, but barely, until 1914. The take for 1911 is illustrative: 200 walrus, 100 foxes, 20 bears, but no whales. The whaling industry in the Lancaster Sound region had died.

THE TRADERS AND THEIR IMPACT

It is difficult to mark the end of the whaling period in the Lancaster Sound region, as elsewhere. Rather than ending abruptly, it changed gradually from complete dependence on the bowhead whale, through a period when the take of bowheads was supplemented with other game and with the results of trade with the Inuit, to a new era dependent almost entirely on trade. The traders who filled the gap between the whaling era and the advent of the Hudson's Bay Company are usually referred to as "free traders."

In 1912, three separate expeditions converged on the Pond Inlet area in an ill-advised search for gold. Captain Henry Toke Munn's vessel Algerine sank southeast of Pond Inlet; he and

his crew had to return south with another party, that of Robert Janes, on the Neptune. Captain Bernier, who had left government service and was privately trading, wintered at Albert Harbour where he traded in furs, skins, ivory, and seal oil. None of the expeditions found gold, but each party subsequently returned to establish independent trading posts in the Pond Inlet area.

Bernier established a post at Albert Harbour in 1914 and operated it until he was bought out by Munn in 1919. Munn formed the Arctic Gold Exploration Syndicate in 1914, purchased the Albert and established a post at Button Point on Bylot Island. Two years later, Janes established a post in Eclipse Sound, 56 km west of Pond Inlet, from where he operated until his death at Cape Crauford on Lancaster Sound in 1920. Competition for trade with the Inuit of the Pond Inlet area was stiff for most of the second decade of the present century.

A new era began in the High Arctic in 1921, when the Hudson's Bay Company established a post at Pond Inlet. Two years later, Munn sold his

interests to the Bay, which then held an effective monopoly over trade in the Lancaster Sound region. In 1922 the Royal Canadian Mounted Police established a detachment in Pond Inlet. They were followed in 1929 by an Anglican and a Catholic mission. Canon Jack Turner also established an Anglican mission at Moffet Inlet in Admiralty Inlet; in 1947 he died as a result of an accidental gunshot wound received there.

The Hudson's Bay Company established in Arctic Bay in 1926, but closed the following year, re-opening permanently in 1936. A small post operated sporadically at Port Leopold on Somerset Island from 1926 to 1940. The Royal Canadian Mounted Police operated a detachment at Dundas Harbour on Devon Island from 1924 to 1933, and again from 1945 until 1951. In 1934 the Hudson's Bay Company moved some families from Cape Dorset, Pond Inlet, and Pangnirtung to establish a post at Dundas Harbour. Conditions proved unfavourable and the post closed in 1936. Some of the Inuit from Dundas Harbour moved to Arctic Bay; others moved to Fort Ross on Somerset Island where a

post opened the following year. It closed in 1948 and most of the population moved to Spence Bay.

The advantage to the Inuit of the establishment of Hudson's Bay Company trading posts has been a more consistent and reliable provision of trade goods than was ever the case under the whalers and the free traders. In the early years, the Bay trade centred on fox pelts; later the focus shifted to seal skins. In more recent years, particularly since most Inuit have moved from their traditional camps into modern settlements, the Bay's establishments have changed from trading posts to small general stores and modern department stores.

CONTEMPORARY LIFESTYLES

Mathiassen had noted that for the Inuit of the Pond Inlet area (the Tununirmiut), Button Point was the most popular spring settlement, people gathering there for seal and narwhal hunting. As the ice broke up in the summer, many moved into Eclipse Sound. Milne Inlet and Navy Board Inlet were favoured areas for caribou hunting in the spring and fall. For the people of Admiralty Inlet (the Tununirusirmiut), Uluksan near Arctic Bay was the principal winter settlement. Cape Crauford was a favoured spring

hunting area; summer and fall were usually spent at the head of Admiralty Inlet. Mathiassen also noted that, almost every spring, some families crossed Lancaster Sound to Devon Island to hunt polar bear, and it was not uncommon for them to spend the summer there or on Somerset Island.

World War II and its aftermath opened many parts of the Arctic. In 1947 a weather station was established at Resolute, named for a Franklin search vessel that had wintered nearby. Two years later an airstrip was opened and Resolute became a focal point of arctic transportation. No Inuit had lived in Resolute in historic times, but in 1953 three families from Port Harrison, Quebec, and one family from Pond Inlet moved there at the suggestion of the Department of Northern Affairs and National Resources. In 1955 six more families arrived. Between 1968 and 1972 others immigrated from Somerset Island and Great Whale River. Today the community is dependent on a mixed economy of wage employment and part-time hunting. One permanent camp still remains at Creswell Bay on Somerset Island.

The fur trader had preferred the Inuit population to remain dispersed, to exploit the game resources of a wider geographical area. But the provision of government services ultimately

lured people from the life of their traditional camps to life in modern serviced communities. The first school in Pond Inlet was constructed in 1959, those in Arctic Bay and Resolute in the 1960s. Many children left the camps to live in hostels in the communities, away from their parents. A mammoth housing program was undertaken in the late 1960s, and camp life was largely abandoned as a permanent lifestyle. Only a few camps remained.

In the past few years, some Inuit have tired of living permanently in large communities and have returned to a life on the land in outpost camps. But this has attracted only a few. Most live in the modern, serviced communities of Pond Inlet, Arctic Bay, Resolute, and Nanisivik, the mining community opened in 1976.

For most Inuit, though, the land and sea retain a special significance. Some rely largely on the game resources of land and sea for their sustenance and support. Others augment the living they gain from nature with the proceeds of carving and handicraft production, seasonal and part-time employment. Even most of those who are employed full-time

in wage labour in the communities turn to the land and sea, back to their cultural roots, on weekends and holidays. The resources of the sea course, in a seasonal pulse, through the waters of Lancaster Sound and its peripheral sounds and fiords. The life of the Inuit has depended to varying degrees, both physically and psychologically, on those resources since prehistoric time. That dependency has continued, through eras of exploration, whaling, and trading. Today, in an area rich in resources both renewable and non-renewable, it continues still.

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An Overview Of Socio-economic Conditions

by K. Harper

INTRODUCTION: THE COMMUNITIES

Four communities are located within the study area identified as the Lancaster Sound Region. They are Resolute, Arctic Bay, Pond Inlet and Nanisivik. Grise Fiord, a small community on Ellesmere Island, is located north of the study area, but utilizes part of the region as hunting territory.

With the exception of Nanisivik, a mining community, each of the communities utilizes a large area of land and sea or ice surrounding its community as a hunting territory. From some of the communities, one or more permanent outpost camps operate, and many other locations, often traditional campsites, are occupied seasonally.

THE POLITICAL CONTEXT, ORGANIZATION AND CONTROL Community Government

Politically, three of the four communities within the study area are organized, each having a local elected council; they are Arctic Bay, Pond Inlet

and Resolute. Nanisivik is as yet unorganized, having no elected council.

The three organized communities in the Lancaster Sound Region have two different types of local or community government, Resolute being a settlement, and Arctic Bay and Pond Inlet being hamlets. In the Northwest Territories, the current system of local government is hierarchical; the rate at which a community progresses through the system, thereby acquiring more authority and responsibility, is dependent on a capability and a desire to manage its own affairs, the existence of a revenue base, and population increase.

The first level of community government in organized communities is that of settlement. Resolute is a settlement, as is Grise Fiord. A settlement is not incorporated, but annually elects a settlement council, usually consisting of eight members, all elected from the community at large. Council members internally choose one of their number to serve as chairman. Because

settlement councils have no legal status, they are, in fact, only advisory bodies. In practice, however, they are often effective influencers of decision, for both the Government of the Northwest Territories and the Department of Indian and Northern Affairs have shown themselves willing to consult with, and act on the advice of settlement councils. Each settlement council is provided with a small per-capita grant to fund certain of its own and the community's activities. For Resolute, in the fiscal year 1978-9, the per-capita grant totalled \$3,340. Municipal services are funded by the Government of the Northwest Territories, but may be operated by the local council or contracted to a third party. A settlement council may hire employees to provide services, for which the council is funded by one of the two senior levels of government. The council's administrative officer, known as the settlement secretary, is an employee of the Government of the Northwest Territories.

The second level of organized community government in the Northwest Territories is that of hamlet. Within the Lancaster Sound Region, Pond Inlet and Arctic Bay are hamlets, established in

1975 and 1976 respectively. Hamlets are established as organized municipal bodies pursuant to the Municipal Ordinance. A hamlet council consists of a mayor and seven councillors. Separate nominations and elections are held for the position of mayor. The hamlet's administrative officer is the secretary-manager, who is a council employee. Hamlet councils may pass resolutions and enact by-laws to regulate certain activities within hamlet boundaries. They hire their own staff, and may enter into contracts for the provision of essential services. The organization of hamlets represents the main adaptation of the southern model of municipal institutions to the realities of the north for, although hamlets function as organized municipalities, they do not raise their operating revenues through taxation. Rather, operating budgets are prepared by the communities, and approved and provided by the Government of the Northwest Territories, less any revenue raised locally, usually through the sale of services and licenses. In each of the two hamlets in the Lancaster Sound Region, less than 10% of operating revenues are generated locally. Capital items are

also provided by the Government of the Northwest Territories, although priorities are determined in consultation with the councils.

In the fiscal year 1978-79, the total budget for the hamlet of Pond Inlet was \$624,612, of which \$53,019 was raised locally; \$354,378, over half the total budget, was spend on the provision of municipal services. The council employed a permanent staff of 16; 4 were administrative personnel, 3 mechanics, 4 municipal services employees, 1 a maintenance man, and 1 a heavy equipment operator. In Arctic Bay, the total budget of the hamlet council was \$373,863, of which \$36,895 was raised locally; \$230,164 was spent providing municipal services. The council engaged 11 full-time employees, 3 administrative personnel, 2 mechanics, 5 municipal services employees, and 1 heavy equipment operator. (Government of the Northwest Territories, Department of Local Government, Baffin Region).

A settlement may achieve hamlet status after successfully petitioning the Commissioner for such status. The usual reason given for the desire to reach hamlet status is the desire to exercise more control over local affairs. In fact, hamlets directly control very little. A hamlet has jurisdiction over the provision of hard services,

including water delivery, sewage and garbage removal, road maintenance, zoning and community planning. The soft services, including social services, education and land management are generally excluded from direct local control, although often it is precisely the desire for control over these critical areas which has prompted a community's petition for hamlet status. In particular, decisions on land use in the areas near the communities, but outside the hamlet's boundaries, areas which provide the base for hunting, fishing and trapping activities, are not subject to the control of local councils. The Department of Indian and Northern Affairs has shown itself willing to consult with communities prior to the issuance of land-use permits in areas used by the communities. Communities have recognized, however, that consultation is not synonymous with control, and have expressed a desire that a hamlet be able to identify an "outer boundary" or a "boundary of interest", larger than the small hamlet boundary, over which the community would have more influence, amounting, some hope, to effective control over all decisions affecting activities in the area. There has been no progress made toward the establishment of these "outer boundaries" for hamlets. Pond Inlet Hamlet

Council has supported the concept of an outer hamlet boundary, as has Arctic Bay to a lesser extent. This may be because Arctic Bay perceives a large project on its doorstep, Nanisivik, a project over which it had been able to exert little control, to be a "fait accompli" and, in fact, beyond its control, whereas Pond Inlet perceives developments in its area all to be potential or future developments, and hopes that the hamlet council may be able to control them.

The Government of the Northwest Territories has voiced a desire to devolve responsibility for programs such as education, wildlife management and social development to hamlet councils, but it has been adamant that a council must prove its ability to manage these programs by first demonstrating its capability to manage the hard services. The resultant sense of powerlessness felt by hamlet councils is heightened by the fact that the Government of the Northwest Territories and federal departments have encouraged the establishment in each community of special-interest committees, functioning independently of the hamlet council, to deal with education, social development, wildlife management and other matters, and generally bypasses the

local council in dealing with these independent committees on specific matters. This prevents the possibility of the local council being viewed as the "prime body" in authority in the community. Initiatives have been undertaken, most notably in Pond Inlet, to correct this situation, and to have all government-sponsored committees function as committees of council.

Nanisivik is an unincorporated community within the Lancaster Sound Region. Its *raison d'etre* is a producing lead-zinc mine. It is termed a Development Area, established under the Area Development Ordinance. The community has no elected council; the Government of the Northwest Territories has encouraged the community to become a settlement, by electing a council, but has left the decision to do so up to the community. To date, it has expressed little interest. The population is predominantly non-native; it is usual in the eastern Arctic that southern Canadians do not take up long-term residence, and show little interest in local politics. Public housing for a northern work-force is extremely limited. This lack of housing may prevent the community from achieving a population balance in which a majority of the residents are Inuit who

wish to make the community their permanent home, and may delay the achievement of any status as an organized community.

Regional Government

The three organized communities in the Lancaster Sound Region participate, along with ten other communities, in the Baffin Regional Council.

Through the Baffin Regional Council, the thirteen communities in the Baffin Region (as defined for administrative purposes by the Government of the Northwest Territories) seek objectives collectively that are perceived as being unattainable locally because of the small population base of each individual community. The regional council is in its third year of operation; community councils regard it as a positive institution, with the potential to strongly influence decisions throughout the region, and which enhances the possibility of local and/or regional control over developments which affect the residents of Baffin Island. It is premature to speculate on whether the regional council will seek to continue functioning in an advocacy role, or whether it will press for full regional government.

The Baffin Regional Council is an assembly of the community councils of the Baffin Region. Members are the mayors and chairmen of the community councils, who are assisted by their administrative secretaries. Members of the Legislative Assembly representing constituencies in the Baffin Region are ex-officio members and provide a link between the regional council and the Legislative Assembly.

One of the regional council's aims is to act as a forum for the discussion of all matters of concern to the people and communities of the Baffin Region. Although it has directed most of its attention to territorial government services and programs within the Baffin Region, it has also dealt officially with various departments and agencies of the federal government and with industry, particularly those companies proposing non-renewable resource development projects within the region.

Arctic Bay, Pond Inlet and Resolute have each hosted sessions of the Baffin Regional Council. The community of Pond Inlet has been a strong force within the regional council since its inception.

Territorial Government

Administratively, the Lancaster Sound Region is a part of the Baffin Region as defined by the Government of the Northwest Territories, and is administered from a regional headquarters in Frobisher Bay.

Politically, the region is divided between two constituencies for representation in the Legislative Assembly. Resolute, Arctic Bay and Nanisivik are part of the High Arctic constituency, along with Grise Fiord and a few small weather stations. Pond Inlet, until 1979 a part of the High Arctic constituency, is now part of the constituency known as Foxe Basin, along with Igloolik and Hall Beach. Both constituencies are represented in the Legislative Assembly by Inuit.

The Legislative Assembly of the Northwest Territories is pressing for increased responsibilities to be developed to it from the federal government, and is anxious for a share of revenues from non-renewable resource development in the Northwest Territories.

The entire Lancaster Sound Region is contained within the bounds of the area identified by Inuit Tapirisat of Canada as Nunavut, an area

which ITC hopes will become a separate territory as a result of a division of the Northwest Territories. The Nunavut proposal calls for a sharing of revenue with the federal government from non-renewable resource development.

Federal Government

Politically, the Lancaster Sound Region is within the federal constituency of Nunatsiak. The Member of Parliament for the constituency is an Inuk who received strong voter support from the Lancaster Sound Region communities in the last two elections. Communities are encouraged by the fact that, for the last year, they have been represented in Parliament by a northern native.

The region is part of the Baffin District of the Department of Indian and Northern Affairs, with headquarters in Frobisher Bay. Land-use permits within the region are granted by the Department, on the advice of the District Manager.

POPULATION

Current

The populations of the four communities within the study area, and Grise Fiord, as of April 1980, are:

Arctic Bay	382
Pond Inlet	660
Resolute	153
Nanisivik	359
Grise Fiord	83

Population statistics for Resolute are for the predominantly Inuit community, and exclude the population of the area locally known as the base, which, although sometimes large, is considered to be transient. The base has grown up around the airport, the transportation hub of the High Arctic, and is approximately 8 kilometres distant from the community.

A population history, by community, indicates the growth, to 1976, of all communities, and the decline since then of some communities. The history presented in Table 1 provides data from varying sources; those for 1971 and 1976 are from the Census of Canada; those for 1977 are from the Government of the Northwest Territories and are for December 31 of that year, based on a count; those for 1978 and 1979 are from the Government of the Northwest Territories and are estimates as of December 31 of each year; and those for 1980 were provided in April of 1980 by individual Field

Service Officers employed by the Government of the Northwest Territories in the communities surveyed.

The figures should be interpreted with caution. In particular, those for Resolute would seem to indicate a large decrease from 1976 to 1977. Some out-migration did occur at that time as some residents returned to their former homes in Port Harrison, Quebec. Also reflected, however, is a difference in the designation of residency; the Census of Canada, from which 1976 figures are taken, almost certainly includes many of the residents of the "base" area in the total for Resolute; these are excluded from the Government of the Northwest Territories figures which show the population from 1977 onwards. In many cases, the figures used by the Government of the Northwest Territories are, at best, estimates.

The Government of the Northwest Territories has analyzed the components of the population change for each community from December 31, 1978 to December 31, 1979. This analysis is presented on Table 2.

From the statistics presented in tables 1 and 2, it is apparent that:

(1) the population of Arctic Bay has decreased since 1977. This may be attributed to the following:

(a) In-migrants to Arctic Bay, who moved there to benefit from the job opportunities available during the construction phase of the mining development at Nanisivik, returned to their home communities (especially Igloolik) as job opportunities became scarcer during the production phase.

(b) Some former residents of Arctic Bay have moved to Nanisivik (Refer to the section on Wage Employment).

(2) The population of Resolute has decreased. This is as a result of some residents returning to their former homes in Port Harrison, Quebec.

(3) The population of Grise Fiord has decreased. This is as a result of some residents returning to their former homes in Port Harrison and Pond Inlet.

(4) The population of Pond Inlet has experienced steady growth, although in the period from December 31, 1978 to December 31, 1979, the number of out-migrants almost equalled the number of births.

(5) The population of Nanisivik has grown the most rapidly. This is primarily as a result of the in-migration of a permanent work force and their families. It will be evident from what follows that the population of Nanisivik differs radically from those of the other communities, in its ethnicity, age distribution and permanence.

The above comments must be considered in any statement as to the projected stability of individual communities within the region.

The most detailed statistics available on Northwest Territories populations are those published by the Government of the Northwest Territories for December 31, 1978.

Population estimates, by age distribution, shown on Table 3, provide information as of that date.

These data are analyzed on the attached graph, Figure 1, which compares percentage populations by age groups for the Lancaster Sound Region and Grise Fiord with those for the Baffin Region. It is evident that the pre-school age populations of Arctic Bay and Pond Inlet are higher than those of the other communities, and higher than the regional average. This holds true for the total populations under 15, as well; in

one community, Arctic Bay, this population exceeds 50% of the total. Pre-school and school-age populations are lowest in Nanisivik, where the potential labour force is highest; this reflects the nature of Nanisivik as an industrial community in which much of the population is transient.

When the population components are considered by ethnicity, the differences between Nanisivik and the rest of the region are even more apparent. Figure 2 indicates ethnicity by percentage of total population. For all "native" communities, the Inuit portions of the populations exceed 88%; for Nanisivik, that percentage is almost the non-Inuit portion, the Inuit portion being a mere 12.5%.

Median ages for the communities, compared with that for the Baffin Region, are shown in Table 4. All organized communities within the region have a median age lower than the average for the Government of the Northwest Territories' Baffin Region. The median age in Grise Fiord is slightly higher, while in Nanisivik it is substantially higher.

Projections

Population projections published by the Government of the Northwest Territories covering the period

1978-1988 appear already to be dated. Only one community, Nanisivik, has reached the 1980 population figure projected for it in 1978. Arctic Bay, Resolute and Grise Fiord have decreased in population since that date.

The population projection to the year 2000, presented in Table 5, begins from the current population in 1980. It makes a number of assumptions:

- (a) that the current population levels form a stable "base" from which to project,
- (b) that the population decreases or unpredicted rates of increase experienced between 1978 and 1980 were abnormal and will not recur,
- (c) that the rates of natural increase identified by the Government of the Northwest Territories are valid, and will continue to be so, and
- (d) that no substantial increase or decrease will occur through migration.

Projections made by the Government of the Northwest Territories for the Baffin Region as a whole indicate that, by 1988, the estimated median age of the population will have risen by about 2 years over 1978 levels. The child population (0-14 years of age) will have decreased by almost

5% from the 1978 level. The school-aged population (5-14 years of age) will also have decreased, by approximately 5%. The labour force (15-64 years of age) will increase by approximately 4%. The population over 65 years will also increase, by about 1%. These projections are summarized in Table 6.

Implications

In the preceeding projection to the year 2000, there are many factors not identified. Many of them are presently not identifiable. This circumstance gives rise to many questions which must be addressed, by communities and by the two senior levels of government, in facing the future and preparing for it on other than an ad-hoc basis. Some of these questions are outlined below:

- (1) What effect would the possible location of some of the infrastructure for offshore oil and gas developments in Pond Inlet or Nanisivik have on the growth of those communities, and on their infrastructures?
- (2) What effect will relocation of people wishing to avail themselves of jobs in non-renewable resource development projects have on the populations of the four communities in the region

and on Grise Fiord? As a stimulus to this discussion, an historic example may be considered. Arctic Bay experienced a net in-migration of population during the years when Nanisivik was under construction, a temporary "boom" which apparently ended in early 1979. Current non-renewable resource development activities and the initiation of some of those under discussion may result in a net increase to the populations of Pond Inlet, Resolute and Nanisivik, and perhaps to that of Arctic Bay. Grise Fiord, not very close to any current or potential developments, may experience a net decrease in population.

(3) Will the shortage of public housing at Nanisivik continue? What effect would the alleviation of this shortage have on the population of Arctic Bay, and on that of other communities? Also, what effect would it have on the very low growth rate of the community at Nanisivik through natural increase?

(4) What will be the fate of Nanisivik when the ore body, the community's present reason for existence, is exhausted? When one considers the costly infrastructure which has been built there, much of it at public expense, it is difficult to credit suggestions that the community will simply

be abandoned. One must wonder what new uses the two senior levels of government will find for the community, and what effect its continued existence will have on its most immediate neighbour, Arctic Bay, and on the other communities of the region. One must wonder too whether neighbouring councils and the Baffin Regional Council will be involved in any of the decision-making as to the future of the community.

(5) Will more residents of Resolute and Grise Fiord, originally from northern Quebec and Pond Inlet, return to their former communities, as has been the trend in recent years?

(6) Will workers from the Central Arctic coast relocate, with their families, to Resolute to be closer to available employment at Little Cornwallis Island?

(7) Will the mine-site at Little Cornwallis Island, despite assurances to the contrary, develop into a town-site?

(8) Will the back-to-the-land movement, as manifested in the establishment of permanent outpost camps continue? (This will be addressed more fully in the section on hunting, fishing and trapping).

The questions outlined above concern individual communities and the effects of developments in or near specific communities on neighbouring communities.

Other questions which must be addressed concern wage employment; hunting, fishing and trapping; education and life style for a population which will almost double during the remainder of this century. These are addressed in the sections which follow.

HUNTING, FISHING AND TRAPPING

Participation

Most Inuit males consider themselves to be hunters on either a full or a part-time basis. Many balance casual or seasonal wage employment with hunting. Permanent employment is available to 35-40% of the existing Inuit labour force; the remainder depend to varying extents on hunting, fishing and trapping. To those permanently employed as wage-earners, hunting remains an important means of supplementing their food supplies with preferred kinds of meat; this part-time hunting is undertaken on weekends and during holidays. The ability to hunt for food,

and the right to do so, even on a part-time basis, is, by many, considered the essence of being Inuk.

Most hunting today is carried out using expensive modern machines and vehicles, especially snowmobiles, boats and motors (freighter canoes, speedboats or longliners), and guns. Even the caribou hunt in summer often is conducted on three-wheel balloon-tired motorcycles. To provide the capital to purchase such instruments, most hunters spend some time each year engaged in casual or in seasonal wage employment, often on construction projects or in oil and gas exploration. Within extended family groups, often those employed permanently in the labour force will contribute to the purchase price of vehicles for relatives who are primarily hunters, and in return they and their families are provided with meat from the hunt for their consumption. In this way it may be said that almost all Inuit participate in some manner in hunting.

Table 7 indicates the number of General Hunting Licenses issued to Inuit in Resolute, Arctic Bay, Pond Inlet and Grise Fiord from

1970-71 to 1978-79; it provides an estimate of the number of Inuit residents of those communities who hunted or trapped in those years.

Comments made in the following discussion generally do not apply to the mining community, Nanisivik. Grise Fiord is included in the discussion.

Species

Inuit of the region hunt a variety of mammals, both marine and terrestrial. Ringed seal and caribou are a major food source and are used by every community; of lesser importance for food are white whale, narwhal, polar bear, muskoxen and Arctic hare. Ringed seal, polar bear, fox and narwhal are also major sources of cash income, through sale of their products, fur in the case of the first three and an ivory tusk in the case of the narwhal. Bearded seal and walrus are not common in close proximity to the communities, and are of lesser importance economically to the region.

Ringed seal are by far the most common type of seal in the region, and remain year-round, as do bearded seal. A few harp seal, which are

migratory, are taken during the summer. White fox is the most common type of fox; occasionally a few blue, cross, red or silver fox are taken.

Fish, particularly char, are also of economic importance to each community, primarily as a domestic food source; a small commercial quota is also allotted to some communities. Geese, ducks and ptarmigan are also hunted, usually opportunistically, and used as food.

Range and Seasonality

With the exception of the 35 residents of outpost camps operating from communities in the region, all those who hunt in the region live in the communities of Arctic Bay, Pond Inlet, Resolute and Grise Fiord. Hunting during most of the year is carried out on trips initiated from those communities.

Marine mammal hunting from Pond Inlet centres on the waters of Navy Board Inlet, Eclipse Sound, Pond Inlet, and the area of southern Lancaster Sound adjacent to Bylot Island. These areas, Bylot Island, and their coasts are also important for fox trapping and fishing. Caribou hunting is done on Baffin Island south of Eclipse Sound and on Borden Peninsula. Traditionally, Inuit from

Pond Inlet used an area extending westward to Boothia Peninsula, Somerset Island and Cornwallis Island, and crossed Lancaster Sound to harvest game along the southern coast of Devon Island.

From Arctic Bay, marine mammal hunting, fox trapping and fishing centre on the waters and coasts of Admiralty Inlet. Caribou hunting is done on Borden Peninsula and outside the study area southeast from lower Admiralty Inlet. Traditionally, hunters from Arctic Bay crossed Lancaster Sound to the south shores of Devon Island, and hunted west as far as the shores of Prince of Wales Island, south onto Boothia Peninsula and off both its coasts.

Marine mammal hunting, fox trapping and fishing, for hunters from Resolute, centre on the waters and shores of southern Cornwallis Island, Griffith Island, McDougall Sound, southern Bathurst Island, Barrow Strait, Russell Island and Somerset Island, where a permanent camp is located at Creswell Bay. Caribou hunting is of most importance on Somerset Island and Prince of Wales Island. On Bathurst Island, caribou are far less numerous now than they formerly were, and the island is no longer hunted for that species. From 1953, when Resolute was settled, until recent

years, a larger hunting area was used, extending north into Penny Strait and northwestern Devon Island; this area is less frequently used now.

Within the study area, hunters from Grise Fiord hunt marine mammals and fish along the north shores of Devon Island. Muskoxen are hunted on northern Devon Island.

In the spring of each year, before break-up, most hunters, with their families, abandon the permanent communities and move to seasonal hunting camps, usually in areas of traditional occupation, where they remain for much of the ice-free season, returning to the communities usually in August or early September. Many of those who are part of the permanent wage-labour force schedule their holidays for this time of year and they too move to the seasonal camps. Before break-up and for much of the ice-free season, then, the population is dispersed over a much broader area. Despite this, a smaller area in total is exploited for hunting at this time of year, because individual hunting ranges are more limited.

Immediately preceding and during break-up, transportation over ice is hazardous and large distances are not covered. During the ice-free

season transportation is primarily by boat and this does not allow the mobility permitted by the use of snowmobiles during the ice-covered seasons of the year. During winter and spring, transportation is almost entirely by snowmobile; dog-teams are seldom used any more - in some communities they are non-existent. The use of a snowmobile permits a hunter to hunt over a wider range, and to travel quickly. However, a snowmobile is also less safe than a dog-team; the switch from dogs to snowmobiles may account, in large measure, for the fact that Inuit of Arctic Bay and Pond Inlet no longer cross the hazardous ice of Lancaster Sound to hunt along the southern coast of Devon Island.

Constraints on hunting activities are:

- the winter darkness (December and January),
- seasons established by law, for some species,
- quotas established by law, for some species,
- transportation difficulties (especially during freeze-up and break-up),
- biological characteristics of certain species,

- necessity for wage employment,
- availability of cash to provide supplies (especially gas as fuel).

Seasons and quotas established by law are summarized on the accompanying table, "Restrictions on Hunting, Fishing and Trapping: Lancaster Sound Region" (Table 8).

The greatest variety of hunting activities is carried on in late winter and early spring. Hunting of most species is limited in December and January, the darkest period of the year.

Ringed seal, the most intensively and extensively hunted species in the region, are hunted year round. Hunting techniques employed include seal-hole hunting, netting, stalking on sea ice, floe-edge hunting and open-water hunting. Ringed seal are least hunted in late July and early August when most loss by sinking occurs, and are most hunted in the spring on the ice. Polar bear hunting is heaviest in the period from February to May, and, although the season is open, least during the mid-winter darkness. Caribou are hunted year-round. Fox trapping is carried out throughout the season, November to April, and is most intensive along sea-ice cracks where fox feed on remains left from seal hunts. Beluga and narwhal enter Barrow Strait from

Lancaster Sound in June or July and leave by October. They are taken by hunters from Resolute and Creswell Bay during July, August and September. From Pond Inlet and Arctic Bay, narwhal are hunted as soon as they arrive, often during mid-June at the floe-edge and in leads, where the least loss through sinking occurs; hunting is most intense in the summer in open water where, unfortunately, the most sinking occurs. Char are caught year-round near Arctic Bay and Pond Inlet, but fishing is most intense in the spring and fall. From Resolute, most char are taken in the period May through September. From Grise Fiord, muskox hunting within the region is permitted only in August. Some walrus are taken in Barrow Strait and McDougall Sound by Resolute Inuit; from Arctic Bay and Pond Inlet, they are hunted on an opportunity basis in conjunction with the hunting of other species. Bearded seal, valued for its hide and as a food source, are hunted in the same manner. The walrus population along the Devon Island coast is not hunted due to distance from communities and difficulty of access.

A graph summarizing seasonality of the hunt is attached; it is Figure 3.

Quantities Harvested

Hunting, fishing and trapping harvest statistics must be viewed with caution. They come generally from three sources, and all are felt to underestimate the harvest.

Data on the harvest of all commercial fur-bearers (all fur-bearers except caribou) may be found in the Fur Export Tax Returns and Fur Traders Records of the Government of the Northwest Territories. These records are compiled from records submitted by those exporting furs from the Northwest Territories, and do not account for furs sold for local use or used domestically. Domestic use is felt to be high in the case of seals and wolves; local sales may be significant for polar bear. These returns also do not account for skins damaged and therefore unsaleable. Figures for the take of caribou, marine mammals except seal, and birds are usually only available from General Hunting License returns up until three years ago. Many licenses are not returned. On those that are, game takes are seriously underestimated; the degree of underestimation is felt to be irregular and unpredictable.

Harvest data presented in the accompanying table, Table 9, are taken from a variety of sources; although it is felt that this presents

the most reliable picture available over a five-year period, this table nonetheless, underestimates the harvest.

Little information is available on quantities of fish caught. Commercial fishing is limited and sales are confined to local or inter-settlement trade. There is no commercial harvest in Resolute or Grise Fiord, although in Creswell Bay char are caught for sale in Resolute. Most fish are used domestically.

Value of the Harvest

Because harvest data is inadequate, the value of the harvest cannot accurately be stated. Prices paid are available from Fur Traders Records, but the same comments made in the section on harvest quantities apply to the figures available on price.

There is also considerable fluctuation in fur prices from year to year. Inuit have often found their hunting-based economy severely depressed as a result of world market factors; in particular, in the mid-1970's the prices of sealskin were subject to the adverse effects of publicity over the seal hunt in the Gulf of St. Lawrence created by southern nature groups. No subsidy program exists to maintain a floor price on furs in those

years in which market prices are down, although from time to time the need for such a program has been raised. The attached graph (Figure 4) shows the fluctuations in the price of pelts of three major fur-bearing species - ringed seal, white fox and polar bear - for the Northwest Territories as a whole over a 22-year period.

Cash income from renewable resource harvesting is primarily from the sale of the skins of fur-bearers. In addition, Inuit of Arctic Bay, Pond Inlet and Creswell Bay earn considerable income from the sale of narwhal tusks; walrus tusks are also sold for cash, but the take of walrus is minimal in the region. Hunters of Grise Fiord also earn cash from the sale of muskox horns.

Table 9 shows the cash income earned from the sale of products of hunting. As income is based on the harvest data presented in the same table, it too underestimates the value of the harvest.

Table 10 presents the average edible weight per animal by species. Table 11 estimates the average annual harvest and the average annual edible weight of "country food" available; its reliability is subject to the same qualifications made earlier on the quality of harvest data. This

table shows that Grise Fiord has the highest per-capita availability of country food - 657 lb., followed by Arctic Bay - 326 lb., Pond Inlet - 297 lb., and Resolute - 215 lb.

It cannot be stressed too strongly that this does not show the consumption of country food, but indicates only its availability. Polar bear, although edible, are harvested primarily for their pelts. The meat of beluga and narwhal is generally not eaten, although an epidermal layer of skin called maktaq is considered a delicacy and rich in vitamin C. Narwhal and walrus are often taken only for their tusks. There is also considerable wastage of meat from seals. At summer camps there are no means of freezing food to preserve it, and much meat is wasted at that time of year. Until the transition from dogteam to snowmobile, most of the meat from the species mentioned above was used, if not as food for humans, then for their dogs.

The switch from the use of dog-teams to the use of the snowmobile as a means of transport during the ice-covered period of the year has disrupted the balance which formerly existed between Inuit and their prey. With the dog-team, one product of the hunt, meat, fueled the means of transport, the dog. With the snowmobile as a

means of transport, cash proceeds from the sale of the skin are used to purchase gas to fuel the vehicle, and to pay for the vehicle itself. The need to generate a cash income through the sale of skins leads to an increase in the harvest, where game resources permit, and to more wastage of meat.

A study published in 1972 (Riewe) calculated, for Grise Fiord, the average annual costs of hunting by dog-team (1965-1967) and by snowmobile (1969-1972). Using a dog-team a hunter's total annual costs (depreciation and expenditures) were \$572.23, his cash income derived from the sale of furs \$550. In the snowmobile era, his total annual costs rose to \$1,846.02, while his cash income derived from fur sales increased to only \$890. The study concluded that, in purely cash terms, it had become uneconomical to hunt, and that, although the machine did not enable hunters to increase their take of game, it did shorten the time required to harvest it. By 1972 all men held wage-earning positions, but hunted after work and on weekends, the mobility of the snowmobile allowing them to take game more quickly. The wages, in turn, were needed to subsidize the cost and operation of the snowmobiles.

It appears, then, that, whereas hunting provides country food as a supplement to the food supplies of those Inuit who are permanent members of the labour force, the converse is also true - resorting to casual or seasonal employment in the labour force subsidizes the increased cost of hunting by snowmobile, for those who consider themselves primarily hunters.

There are, however, values to the hunt other than economic. Inuit show a preference for country food over that available commercially in local retail outlets. Attempts to impute values for country food face many problems, for it has proven difficult to describe in monetary terms the nutritional and cultural importance of the consumption of locally-harvested game.

PetroCanada has published statistics on the imputed value of country food per community (PetroCanada, 1980). It has assumed, arbitrarily, that beef could be a replacement for country food, were the latter not available, and has assumed the price of beef in southern Canada as a base price, to which it has added transportation costs and a retail mark-up. Its values, however, are in error because transportation costs have been incorrectly calculated - to the Montreal-Resolute air freight

rate, it has added air freight rates from Resolute to each of Arctic Bay, Pond Inlet and Grise Fiord to calculate transportation costs to those communities. Yet Arctic Bay and Pond Inlet have not been supplied with food via Resolute for over two years but, rather, through Nanisivik and, for Pond Inlet, Timmins, Ontario. In addition, current Hudson's Bay Company pricing policies allow a mark-up on the southern cost price, but not on transportation costs. It should be added that PetroCanada's figures on imputed values for country food do not include polar bear, whereas the statistics presented here do. Table 12 uses PetroCanada's base price of \$1.50 per pound (\$3.30 per kilogram) for beef in southern Canada and adds current and correct freight rates to estimate the value per pound and per kilogram of country food in each community. Under this method, country food is most valuable, per unit of weight, in Grise Fiord, followed by Pond Inlet, Arctic Bay and Resolute. Table 13 imputes the value of country food available in each community, and the value per capita. Grise Fiord has the highest value of country food available per capita, \$2,173; in all other communities the figure is below \$1,000 per capita, with Resolute being the lowest, at \$568.

The availability of country food represents a substantial saving over the cost of purchasing comparable foods commercially. It is the preference for country food, combined with the high esteem in which the skills of the hunter are held, rather than economic criteria, which have kept hunting a prestigious activity.

Outpost Camps

In recent years, many native residents of communities throughout the Northwest Territories have expressed a wish to return to a life on the land. Many have discovered, though, that it has become expensive to re-establish themselves in camp life, especially because, in the period since they initially abandoned life on the land for life in organized communities, they have come to depend heavily on snowmobiles, large freighter canoes and powerful outboard motors. Many have approached the Government of the Northwest Territories for assistance in establishing their camps. The Government responded with the establishment of an Outpost Camp Program, administered through the Wildlife Service of the Department of Renewable Resources. Within the Lancaster Sound Region, there are two outpost camps which receive financial assistance from the Government of the

Northwest Territories. Two more, barely south of the southern delimitation of the region, are within the sphere of influence of Arctic Bay and Pond Inlet, and are also considered here. A fifth, within the region, is unfunded to date.

The Government of the Northwest Territories has established an Outpost Camp Policy, the object of which is "to provide financial assistance and service to any family or group of persons, less than 60 in number, who hold General Hunting Licenses, and who are living away from settlements or wish to move from settlements to isolated locations in the Northwest Territories for at least 6 months of a year to make a living off the land." (It should be noted that, in the Lancaster Sound Region, the four assisted outpost camps are year-round operations). The policy outlines criteria which a camp must meet in order to receive assistance, defines the maximum level of government assistance, and deals with the provision of medical services and social assistance, and with monitoring by the Wildlife Service. Of special interest are the following provisions: (a) air transportation of participants, supplies and equipment to the camp when the people are unable to transport themselves at the start of the season, and back to the home

settlement at the end of the season, (b) the provision of gasoline and oil if participants wish to transport themselves, their supplies and equipment, by snowmobile or by boat, (c) a contribution for food and supplies, excluding capital equipment such as snowmobiles, boats, canoes, engines, generators or outboard motors, (d) heating oil for camps located above the treeline, (e) transportation of heating oil for camps located above the treeline, where the participants cannot move the fuel themselves. It must be noted that the foregoing deals with maximum levels of assistance; by no means do outpost camps in the Lancaster Sound Region receive the maximum level of assistance. Assistance received is adjusted from year to year. If a camp proves financially successful, its assistance may be adjusted accordingly.

Within the Lancaster Sound Region, two camps operate out of Pond Inlet. They are Ikpeen, at 71°52'N., 74°15'N., a camp of one family composed of two adults and seven children; and Ipitalik, at 72°10'N., 80°27'W., a camp of two families composed of four adults and four children. From Arctic Bay, one funded camp operates at Igloojuat, at 71°35'N., 84°40'W., a camp of two families composed of

four adults and six children. All of these locations have been re-occupied in recent years. From Resolute, a camp operates at Creswell Bay on Somerset Island, at 72°45'N., 94°15'W., it has two families composed of four adults and four children, and has been continuously occupied. From Arctic Bay a camp also operates sporadically at Fitzgerald Bay on the western side of Brodeur Peninsula, at 72°10'N., 89°45'W., as it is not, to date assisted by the Government of the Northwest Territories, statistics on its operation are not available.

Statistics outlining funding and estimated income for the four assisted camps are outlined below on Table 14.

Detailed income statistics for two camps for the first nine months of the 1978-79 fiscal year are shown on Table 15.

In its evaluation of the Outpost Camp Program done at the end of 1978, the Government of the Northwest Territories, Wildlife Service, Baffin Region, concluded that, economically, the program was a success. In the 1978-79 fiscal year, the 16 outpost camps in the Baffin Region received a total of \$189,571 in assistance from the Government of the Northwest Territories, but generated \$333,703 in other revenues in the first

nine months of that year. The Government of the Northwest Territories estimated that, by the end of the fiscal year, the camps would have generated almost \$500,000 in income exclusive of assistance provided by the Government of the Northwest Territories. The Government of the Northwest Territories claims that, had the participants been living in settlements, unemployed, the cost to the Department of Social Development would have been an estimated \$250,000. For the Baffin Region, 73.7% of the total income generated in outpost camps is classed by the Government of the Northwest Territories as income from a "cultural activity", while the remaining 26.3% is such as could be earned by a townsman.

Only 35 people live in the four assisted camps in the Lancaster Sound Region. Clearly, then, the existence of outpost camps is not yet a major force in the economic life of the region. Yet it is a phenomenon which, despite the small numbers involved, has attracted a great deal of attention, both from the Government of the Northwest Territories and from the communities. It is a movement which, because of its appeal to community residents and the response by the Government of Northwest Territories in funding the program, may well grow. It is, however, not

without disadvantages. The major one is the lack of the provision of formal education for camp children. It is, to date, tacitly assumed that if a child wants education he will live in a community; if his parents decide that the family should live in a camp their child will receive no education unless the parents make private arrangements to board him with relatives in a community. That, and the lack of medical services are the main social disadvantages of camp life. Economically, some camp residents have expressed an interest in a return to the use of dog-teams for hunting. That decision, in light of the comments made earlier on hunting by snowmobile, may make life in outpost camps more economically viable. For now, life in an outpost camp provides one means by which those people who wish to live more fully off the land, and who are capable of doing so, may in some measure escape the social disorganization which has accompanied the rapid transition to settlement life. As the population of the region continues to grow rapidly, and as job prospects for an expanded population remain limited, the area immediately surrounding the existing communities may become over-hunted; the future may see many people, through economic necessity, opting for life in outpost camps.

WAGE EMPLOYMENT

Historical Overview

Probably as long as 100 years ago, some Inuit worked seasonally in the bowhead whaling industry, exchanging labour for supplies. To some extent, they were also, at that time, involved in a trade or barter economy, exchanging furs and ivory for supplies. This exchange of labour and produce for supplies continued to the end of the whaling era and throughout the free trading era. In the 1920's, with the establishment of Hudson's Bay Company posts in Arctic Bay and Pond Inlet, and with the establishment of an RCMP detachment in Pond Inlet, opportunities were provided for a few Inuit to become permanent employees, usually as post assistants, in exchange, initially, for supplies, and later for cash incomes. The arrival of the annual ship would provide labour opportunities for many Inuit for a few days each summer. This situation persisted until the 1950's.

As government infrastructure began to develop in the communities in the 1950's and 1960's, more Inuit found employment with government, providing services generally as labourers. Relatively few permanent positions were available, but the rapid expansion of government in the north in the mid

and late 1960's and the major program which accompanied it, to provide adequate housing in communities, provided much seasonal and casual employment, especially in construction. This period coincided with the "snowmobile revolution" mentioned earlier; the availability of much seasonal and casual employment may, in fact, have encouraged the abandonment of the use of dog-teams.

Industrial Employment

Employment in industry began in the region in the early 1970's.

In 1972 Panarctic began employing Inuit from Pond Inlet and Arctic Bay in its exploration programs in the Arctic Islands. The jobs were far removed from the communities, and crews were rotated to the sites by aircraft. The company made attempts to rationalize its employment policies with its perceptions of native cultural values; it developed a rotation system for native workers, initially 20 days of work on site, followed by 10 days of holidays back in the communities. Over the years Panarctic's rotation system has varied in detail, but it has always been viewed by Inuit in a positive manner - the length of time between shifts has permitted Inuit

to hunt during their time off if they preferred, while the lengths of the shifts, with the large amounts of over-time earned, have meant that workers returned home from each shift with large amounts of cash. Often up to a dozen men from each community have been employed at one time at Panarctic sites. Panarctic continues to employ men from Arctic Bay and Pond Inlet, though not in the numbers hired in previous years.

Beginning in 1972, Panarctic employment injected large sums of money into the economies of Arctic Bay and Pond Inlet. The results of this have included:

- increased consumption of material goods,
- changed standard of living,
- increased consumption of alcohol,
- higher aspirations, which often could not be met or maintained.

The company professed a desire to identify and train a competent pool of native labourers and to assist native employees to determine career objectives. In this regard, its program was unsuccessful. Native dispatchers employed in the communities to recruit a pool of labour for each shift rotation viewed the exercise in a different manner than did company management; the dispatcher, initially the council chairman in each

community, quite understandably saw it as a means by which, over a period of time, most of the eligible men of the community had one or more opportunities for a tour of duty at a Panarctic site where a 20-day tour could net an employee almost the total purchase price of a new Skidoo or canoe. Thus, the money generated by Panarctic employment was more equitably shared among the community. As a result, some men were unable to become regular employees, as they and company management had hoped. Further, the availability of industrial employment and the lack of selectivity exercised by dispatchers and the company encouraged many young men, often only in their mid-teens, to drop out of school to become part of the unskilled industrial labour force.

In 1974 the Government of Canada approved the development of a mine at Strathcona Sound, later renamed Nanisivik, a site 27 kilometres from Arctic Bay; seasonal summer employment in exploration programs there had been available to a few men over a number of years.

In 1974, as the mining and community infrastructures were under construction, many jobs were available for labourers and heavy equipment operators. As a result, Arctic Bay experienced a miniature "boom". Many men from Arctic Bay found

employment at Nanisivik; in addition many workers and their families moved in to Arctic Bay, especially from Igloolik and Hall Beach - as most shared accommodation with relatives, the housing situation became quite overcrowded. With the end of the heavy construction phase and the beginning of production in 1976, jobs for unskilled labourers became scarcer. Many former employees who had moved their families to Arctic Bay then returned to their home communities.

Nanisivik too has had a program of rotation for employees, although it is generally considered by Inuit to be less attractive than that of Panarctic. The rotation for Inuit is successively six weeks at work followed by two weeks leave without pay, followed by seven weeks at work and then two weeks leave with pay. Most employees work 12 hours a day, usually six days a week. Table 16 indicates the home communities of the 301 northern workers who worked at the mine site during the 4-year period between January 1, 1975 and December 31, 1978. It will be observed that the largest number of employees during that period came from Arctic Bay, Frobisher Bay and Igloolik. One should note also that only 16 men from Pond Inlet (5% of the total employed) worked at the mine during that period; apparently most

Pond Inlet men find employment with Panarctic, with its shorter work period, more attractive. Employees from Arctic Bay are able to live in Arctic Bay and commute to work daily by bus. Men recruited in other communities are housed at the mine-site during their period of employment. Northern workers at Nanisivik are most often aged 21-25 (26%) at the time of their first employment, followed by the age group 26-30 (23%). Of 284 workers surveyed, 42% were single, 57% married and 1% divorced.

At Nanisivik, housing for Inuit employees with families is extremely limited. In 1978 the Northwest Territories Housing Corporation constructed 15 housing units at Nanisivik, for occupancy by Inuit apprentices. (These units are leased by Nanisivik Mines Ltd. as a bulk lease.) This was seen as a positive move toward meeting the company's agreement that 60% of its staff would be Inuit within three years of the commencement of production. Five families which moved from Arctic Bay are among those Inuit families which now live at Nanisivik. It is surprising to note, however, that, of the five families, the heads of four were formerly long-term councillors in Arctic Bay; this has had a detrimental effect on community leadership in

Arctic Bay within the past year and a half.

The total number of northerners employed at Nanisivik during any one year increased between 1975 and 1976, but declined by 1977, and declined again sharply by 1978. This information is shown on Table 17. A study by the Baffin Region Inuit Association (BRIA, 1979) has shown that workers of the longest duration at Nanisivik are more often from Igloolik, Arctic Bay or South Baffin communities; are more often employed as apprentices, skilled workers or drivers; have high job classifications; are most often aged 31-40 years; are married; and have from three to five children. Employment at Nanisivik is taken by very few workers from Pond Inlet, Resolute and Grise Fiord. Table 18 lists occupations at which Inuit workers have been employed at Nanisivik at the time of their first employment; labourers, carpenters, heavy equipment operators and warehousemen lead the list.

Table 19 shows the wages earned at Nanisivik by Inuit employees, by community and by year for a three-year period. To Arctic Bay, earnings from mine employment are highly significant; in 1978, mine earnings of \$191,500 were almost double the cash earnings from fur harvest during the 1978-9 year.

Nanisivik has not been without significant benefit to the region, and especially to the community of Arctic Bay; in particular, Arctic Bay has had much cheaper air freight rates and easier access to other communities since the construction of the airport at Nanisivik. Nonetheless, the mine is not close to reaching its target for employment of northerners of 60% of total work force. The study by the Baffin Region Inuit Association has pointed out that, were half the 216 mine employees Inuit, earning an average of \$25,000 per year, total Inuit earnings would amount to \$2,700,000 per year. That figure would be approximately 3.8 times the total current Inuit earnings from mine employment, of \$712,580.

Community Employment

Most Inuit, especially those who are married, would prefer to work in the communities in which they live, yet in those communities opportunities for permanent employment are limited. There are generally positions as municipal services workers, administrators, mechanics, clerks, teachers and teacher assistants.

Tables 20, 21, 22 and 23 provide an employment record for Inuit from each of Arctic Bay, Pond Inlet, Resolute and Grise Fiord, as of

1976. This information originates with the Territorial Employment Record and Information System (TERIS) of the Government of the Northwest Territories. Although it was felt desirable to update these profiles to 1980, current data as a result of TERIS' most recent survey are considered unreliable as to ethnic origin because those surveyed in the communities usually did not answer the survey question as to ethnicity. Participation in TERIS surveys is voluntary; as a result, data often have a low degree of reliability.

Table 24 provides a picture of employment in 1979, by employer, in the four communities. (It is assumed that most employees at Nanisivik work for Nanisivik Mines Ltd. and a few for the two senior levels of government.) These data, provided also by TERIS, are not ethnic-specific, but it is assumed that non-Inuit respondents do not make up a large proportion of the total.

In Pond Inlet, tourism has become an important industry. The local co-operative operates a hotel year-round in the community, and runs a fishing camp at Koluktoo Bay for approximately six weeks each summer. These activities provide jobs and training opportunities for many local residents. Because of its major

airport, Resolute is a staging point for tourist activities north of the region, including trips to northern Ellesmere Island and the North Pole. In the rest of the region tourism is undeveloped, although it is felt that the potential is great.

Small businesses, many owned and operated by native entrepreneurs, provide employment for a few more individuals in each community, usually in coffee shops, billiard rooms, taxi and freight haulage services and/or small retail stores. Some of these provide employment for only a proprietor, others for a small staff as well; wages paid are usually low.

Table 25 shows the positions available with the hamlets of Arctic Bay and Pond Inlet during the fiscal year 1979-80, and the salaries which currently accompany these positions, salaries ranging from \$11,101 to \$27,765 annually. These are, financially, the most attractive positions available to Inuit in the communities.

Resolute Inuit have had access to many jobs at the "base" area since the establishment of the community in 1953. Because of the proximity of the community to the base, more Inuit in Resolute speak English than is the case in other communities; employer-employee relations are, therefore, easier, and Inuit are more readily

employable in a variety of positions. Within the last year, additional employment opportunities have been available for workers from Resolute at Cominco's mining development at Little Cornwallis Island. Men from Grise Fiord, where job opportunities are severely limited, have also found employment with Cominco.

In all communities, employment for Inuit females is very limited. A few positions are available for housekeepers, full-time baby-sitters for working mothers, and administrative and store clerks. Some Inuit have suggested that industry should strive to identify positions which could be filled by females.

Implications

The Inuit communities in the region all have young populations. In Arctic Bay, the median age at December 31, 1978 was 15.0, in Pond Inlet 15.1, and in Resolute 17.2. Through natural increase, the populations are growing rapidly and community size will increase dramatically over the next twenty years if not affected by out-migration. During this time all those who are now children will reach adulthood and enter the labour force. It is generally assumed that hunting and trapping alone will not support a greatly increased

population. The corollary of this assumption is that many, perhaps most, of these young people will enter the labour force. The question must be asked - What will they do?

Proponents of non-renewable resource development projects have attempted to identify employment opportunities which might be made available to community residents, in an attempt to maximize the benefits of their projects for northerners. These attempts, in potential oil and gas developments and in shipping projects, have proven extremely difficult, given the current educational levels of most native people, and the nature of specific projects, which are capital intensive and labour un-intensive. During production phases, most require little unskilled labour. With mining projects, specifically Cominco's development at Little Cornwallis Island, more opportunities for employment may be available, but Inuit are generally skeptical of the intentions of company management, given the failure of Nanisivik, the only other mine in their experience, to reach its northern employment quota within three years of the commencement of production. The high turnover rate for male Inuit workers at Nanisivik may indicate that "Inuit have not been willing to become the steady,

increasingly skilled workforce, reliably assimilated into the industrial wage economy, that had been envisaged when the Nanisivik project was approved." (Canadian Arctic Resources Committee, 1980: 68-9)

While employment in industrial projects themselves may be limited, opportunities may arise for other enterprises to develop because of the elaborate infrastructures which will be needed by industry in the north. As an example, should industry require more and larger airports in the region to support major projects, the frequency of commercial flights from southern Canada may increase, making the region more easily accessible to tourists. With the exception of that of the Pond Inlet area, the tourism potential of the region is largely untouched. Imaginative approaches to tourism should identify ways to diversify tourist programs which to date have centred on a brief, ice-free fishing season in the summer. Tourism, if married with native entrepreneurial aspirations, may provide a variety of year-round employment through local co-operatives and private businesses created to exploit that potential. Should major industrial projects develop close to existing communities, the provision of services rather than labour may

permit the creation of other small businesses, particularly in transportation, freight haulage and expediting.

The value of a sound education has not been evident to Inuit in the region during the past decade, when job opportunities for unskilled labourers have been many. Many parents of school-aged children in the region have themselves never attended school. Most speak only Inuktitut and view the school, though it is in their own community, as an institution in which their children are weaned from native cultural values. Understandably, then, parental support for education is often lacking. The accompanying tables (26, 27, 28, 29, 30) provide a statistical picture of the education system in the region and in Grise Fiord. Locally, grade 8 or 9 is the highest grade presently offered in any school. Of 22 certified teachers in the 5 communities, only 1 is Inuk, yet 410 of the total of 451 students (91%) are Inuit. In the predominantly native communities (all excluding Nanisivik), the picture is even more disturbing - 1 of 19 teachers is Inuk, yet the Inuit student population is 375 (96%) of the total of 389. Currently only 21 students from the region (including Grise Fiord) are attending high school in Frobisher Bay, a community to which many parents in the region

refuse to send their children. Four students from the region attend the territorial Teacher Education Program. A desire for a high school in the northern part of the Baffin Region has often been expressed; Pond Inlet has often been mentioned as a desirable location for it. Obviously, current numbers attending high school do not warrant it, yet perhaps a high school closer to home would have the support of parents and enrolment would increase. In this way, Inuit might become better prepared to meet the challenge of a variety of employment, including industrial, in the next two decades.

Adult education at the community level has not been afforded a prominent role in the total educational process. The emphasis that the Department of Education places on its in-school programs, and the relative paucity of resources devoted to adult programs in the communities contribute to a widening of the gap between children and their parents. To better prepare adults for employment opportunities which may materialize in the next two decades, industry and government will have to co-operate in identifying potential jobs and the skills necessary to fill them, and in developing training programs to provide those skills.

INCOMES

Estimates of total income per community, or per capita, are very difficult to make.

PetroCanada's socio-economic statement for the Arctic Pilot Project has cited studies estimating the income levels of residents of Resolute, Pond Inlet and Arctic Bay. It was estimated that, in 1977, residents of Resolute earned approximately \$322,000, or about \$1,350 per capita, from self-employment (including hunting, fishing and trapping), wages and salaries; and an additional \$37,300, or \$160 per capita, from transfer payments. In 1976 Pond Inlet residents were estimated to have earned about \$488,000, or \$980 per capita, from self-employment, wages and salaries; and \$33,000, or \$66 per capita, from transfer payments. Arctic Bay residents are thought to have earned approximately \$233,000, or \$600 per capita; and received about \$19,000, or \$50 per capita, from transfer payments in 1976. The impression given is that income levels in these communities are quite depressed. This author, however, regards these estimates as extremely low. What follows will attempt to identify components of community incomes, to arrive at a more accurate estimate of total community incomes.

Table 31 shows the average incomes of those who filed income tax returns from 1974 to 1978, for a group of communities in the Northwest Territories including those in the Lancaster Sound Region. Although the group of communities is large, those included are almost all communities similar to those in the region, that is, predominantly Inuit communities where hunting, fishing and trapping are major activities. (It is felt that those giving their permanent address for income tax purposes as the weather stations included in the group are so few in number that their presence does not affect the validity of the averages). The table shows a decrease in average income from 1977 to 1978, with almost 500 more returns being filed in the latter year. In 1978, 27% of returnees earned under \$2,000, compared with 11.5% in 1977. This apparent decrease in incomes may be quite deceptive; it probably reflects the presence of a great deal of casual labour, perhaps through an increase in federally-funded incentive programs, for which tax statements were received, necessitating the filing of an income tax return in order to claim a tax refund. It is impossible to disaggregate from Revenue Canada's data information on individual

communities as small as those in the Lancaster Sound Region. Table 32 compares average incomes of those who filed tax returns in the same group of communities, with the Northwest Territories as a whole, and with Canada.

Most Inuit declare, for tax purposes, only income supported by a T4 slip. Thus, most income from the sale of furs and ivory goes unreported, as does that from the sale of handicrafts and carvings. Estimates of these amounts can only be approximations.

The section on hunting, fishing and trapping gave estimates of income from the sale of furs and ivory in Table 9 for the years 1974-5 to 1978-9. These estimates range from a low of \$28,678 in Grise Fiord in 1975-6, to a high of \$100,201 in Arctic Bay in 1978-9. In the hunting year 1978-9 (July 1, 1978 to June 30, 1979), residents of Pond Inlet earned \$150 per capita from sale of the products of hunting, those of Arctic Bay \$249, those of Resolute \$370, and those of Grise Fiord \$438.

Data on income earned from the sale of carvings and handicrafts is considered less reliable than that for hunting, fishing and trapping. Historically, the sale of carvings and handicrafts has been of most economic importance to Arctic Bay, where a distinctive local stone is

quarried for carving. In the past few years, with the increase in wage employment, carving has declined as an economic activity in most communities. Women and elderly people often produce carvings for sale.

Salaries paid by the hamlets of Arctic Bay and Pond Inlet were set out in Table 25 in the section on wage employment, which shows that the 16 regular employees in Pond Inlet earned a total of \$279,082 in the fiscal year 1978-9, salaries ranging from \$14,334 to \$26,719 (average salary \$17,443); and that in Arctic Bay the total was \$201,252 for 11 employees, with salaries ranging from \$11,101 to \$27,765 (average salary \$18,296). Often, however, federally and territorially sponsored incentive programs are locally sponsored by settlement and hamlet councils, and salaries are paid by those councils. Thus, many more than the regular employees are on community councils' payrolls over the course of a year. In the fiscal years 1977-8 and 1978-9, the total payrolls for the Hamlet of Arctic Bay were \$242,350 and \$191,561 respectively; for Pond Inlet, total payrolls were \$289,822 and \$360,175 respectively. This information, plus that for the settlements of Resolute and Grise Fiord, is summarized by type of expenditure, on Table 33.

Employment at Nanisivik was discussed in the section on wage employment. On Table 19 it was noted that employment at Nanisivik contributes most to incomes of workers from Arctic Bay. In 1977, 27 workers from Arctic Bay earned a total of \$181,305 at Nanisivik; in 1978, 17 workers earned \$191,505. Nanisivik employment contributes little to Pond Inlet - in 1977 earnings of 4 workers totalled \$29,600, and in 1978 those of 3 workers totalled \$26,901. Earnings from Nanisivik for Resolute and Grise Fiord are even less significant, the highest being \$5,100 for 3 workers from Grise Fiord in 1977.

Panarctic continues to employ men from Arctic Bay and Pond Inlet, in an employment program which began in 1972.

Table 34 provides an estimate of family allowance, old age security and guaranteed income supplement benefits paid to recipients in Arctic Bay, Pond Inlet, Resolute and Grise Fiord in 1979. Amounts of money entering communities through these payments are significant, especially in Arctic Bay and Pond Inlet where the age group benefiting from family allowance payments is proportionately very large; for Arctic Bay, transfer payments per capita are approximately \$144 annually, for Pond Inlet \$134.

It is generally assumed that social assistance payments in northern communities are high. It is more correct to say that social assistance payments fluctuate considerably, and are not necessarily high. They reflect many factors - the availability of employment opportunities; the existence in specific communities of federal and territorial incentive programs; fluctuations in fur prices which affect the viability of hunting for a living; the season, for hunting is difficult in the cold and dark months of December and January and again during break-up and freeze-up.

Table 35 presents social assistance payments made in Arctic Bay, Pond Inlet, Resolute and Grise Fiord over a 5-year period. For the final year, fiscal 1978-9, payments in Arctic Bay increased to \$39,479, or \$98 per capita; in Pond Inlet they almost tripled, to \$110,933, or \$170 per capita; in Resolute they increased to \$22,281, or \$133 per capita; and in Grise Fiord they decreased to \$3,435, only \$35 per capita.

Table 36 provides detailed breakdowns of social assistance payments, by month and by cause of need, for the calendar year 1979. In Arctic Bay, Pond Inlet and Grise Fiord, the largest expenditures were made for reasons of health; in

Resolute, the major expenditure was to those employable but unemployed. For Arctic Bay and Pond Inlet, payments were highest in January and February when darkness prevents extensive hunting. Table 37 shows, for one sample community - Arctic Bay - the number of social assistance cases and units, by cause of need, for the calendar year 1979, where case refers to the applicant for assistance and unit to applicant plus dependents. On Table 38 are shown the number of cases who received assistance at least once in the 11-month period from April 1, 1979 to February 29, 1980; the highest average payment per case was in Pond Inlet - \$1,542; the lowest in Grise Fiord - \$521.

In each community, housing is provided by the Northwest Territories Housing Corporation. Table 39 shows the number of housing units occupied and the number of new units constructed, for each community for the period 1975-1980. Rents charged are geared to income levels, but a ceiling of \$315 per month has been established; the minimum charged is \$28 per month. Rents charged for low-rental and public housing for the past 5 years are summarized on Table 40. Rents include fuel oil and its delivery, water and its delivery, electricity, garbage and sewage removal, and maintenance. These services are very expensive,

and rents recovered represent only a small portion of actual costs - less than 20% in each community in the region. The balance is borne by the Housing Corporation. Table 41 compares revenues and expenditures on low rental and public housing for each community in 1978. This heavy subsidization of public housing benefits all Inuit in the region, and some non-Inuit. Only one Inuk in the region lives in his own house; where costs are so high and subsidies so large, there is no incentive for home ownership, despite much talk of its desirability, initiated by government from time to time. Housing subsidies represent a major saving to each community. Were the economic rents to be charged for housing, incomes would have to be substantially higher, either through higher wages from employment (which would be taxed at a higher rate) or higher social assistance payments.

Table 42 identifies components of income, by community, for a 12-month period. It makes no pretence of completeness, since values could not be attached to all sources of income; estimates are included where necessary. In addition, reporting years vary for different activities and sources of data. The author feels that the data for Arctic Bay, Pond Inlet and Grise Fiord have a higher reliability than those presented for

Resolute; for Resolute, estimating income earned through employment at the base is made difficult because of the number of employers there. Cash income, per capita, is highest in Grise Fiord, where it is \$4,961 annually; it is lowest in Pond Inlet, at \$3,556.

A comparison of income from the sale of products of hunting, fishing and trapping with that from wage employment shows that in no community do cash proceeds from the hunt exceed 10% of income from wage employment. For Pond Inlet, cash income from hunting approximates only 5% of wage income, for Arctic Bay 8%, for Grise Fiord 9% and for Resolute 10%.

Food costs, for imported food-stuffs, are very high, particularly for those items which are supplied throughout the year by air. There is no subsidy on food, although there has been considerable talk in the last few years about the need for one, particularly on fresh fruit and vegetables.

Country food is available in each community to varying degrees. The costs of harvesting are poorly known; it has been estimated that, in 1976 in Resolute, the cost of harvesting an estimated 77,000 pounds of food, hunting by snowmobile, was approximately 76 cents per pound. (Kemp et al.,

1977). As discussed under hunting, fishing and trapping, it is difficult to impute an accurate replacement value for country food.

Table 11 summarized the availability of country food, and demonstrated that, on the average, 657 pounds of country food were available per-capita each year in Grise Fiord, 326 pounds in Arctic Bay, 297 pounds in Pond Inlet and 215 pounds in Resolute.

Table 12 estimated the value, per unit weight, of country food available and Table 13 its inputted value. To replace country food with store-bought food, supplied by air freight from southern Canada, is most expensive in Grise Fiord and least so in Resolute. The value of country food available per capita per year is highest in Grise Fiord, at \$2,173. In all other communities it is less than \$1,000 per capita, with Resolute being the lowest at \$568.

Table 42 adds the inputted value of country food available to the cash income per community. The total figure more accurately reflects the continued importance of hunting, fishing and trapping in the economies of the communities considered. The sale of products of the hunt and the value of country food available represents, for Resolute, 27% of income derived from wage

employment; for Pond Inlet and Arctic Bay, it represents 37%, and for Grise Fiord 62%.

Sale of products of the hunt and the value of country food available equal 20% of total income available in cash and kind in Resolute, 22% in Pond Inlet, 24% in Arctic Bay, and 37% in Grise Fiord. Thus, whereas the cash income from the sale of products of the hunt is extremely low, the potential total economic contribution of hunting to northern lifestyles is much higher. It must be remembered that not all meat taken is consumed; nonetheless, the savings realized through the consumption of country food, rather than store-bought food, are considerable. Further, through increased inter-settlement trade, much of the potential indicated above could be realized.

These statistics erode the belief that Inuit in the region currently derive a major portion of their cash incomes from hunting, fishing and trapping. They erode also the belief that Inuit have not participated to any great extent in wage employment. Finally, they should correct impressions of current standards of living in the communities by demonstrating that living standards are relatively high.

CONCLUSION

Virtually all adult males in the Lancaster Sound Region participate to some degree in wage employment. For many, this employment is casual or seasonal; for others it is full-time. To all, however, hunting, fishing and trapping remain important activities to varying degrees. To those who hunt almost full-time, casual and seasonal employment may provide the means to purchase expensive items to use in the hunt, items such as snowmobiles, canoes, outboard motors and rifles. To those who are permanently wage-employed, hunting provides preferred country food for the table, to supplement expensive food items purchased in local retail stores. Also, for those in the labour force, hunting is of cultural importance; for most, the ability to hunt and the right to do so are closely bound with the essence of being Inuk. This is not to deny that Inuit are heavily involved in wage employment. Many, however, have not internalized the values of punctuality and responsibility which Euro-Canadian culture associates with successful wage employment, and resort to wage employment only as a means of financing more traditional pursuits.

Others have been steadily and reliably employed for many years and hunt only on weekends or during holidays. Hunting is often seen as a necessary psychological device, enabling many to perform adequately in wage employment during the week. Indeed, the social stability of the family and the community is often seen as being inextricably tied to the availability of game resources and the ability to harvest them.

Inuit are concerned about developments taking place in and proposed for their land and the waters which surround it. They are concerned particularly about the possibilities of environmental pollution which may damage the game resources on which many depend and which provide their preferred food supply. They are concerned too that non-renewable resource development proposals have made no concrete statements, save professions of good intent, regarding compensation to Inuit for loss of income caused by environmental damage.

Inuit believe that the game resources of the region are essential to maintenance of their current life styles. Animals provide products saleable for cash, but, of equal importance to Inuit, they provide the skins necessary for the fashioning of warm and durable garments and the

food Inuit feel is necessary for their health and well-being.

The presence of television in all communities of the region (but not in Grise Fiord) has heightened awareness of the potential for environmental damage through oil spills, blow-outs and tanker accidents. At the same time, television has created an awareness of national energy needs and the problems created by too heavy a dependence on foreign sources of supply.

There is no consensus among Inuit in the communities on the desirability of non-renewable resource development in the region. Some support the concept; others steadfastly oppose it; many are indifferent. Some support specific proposals while having serious reservations about the viability of and benefits from others.

Community councils have found it impossible to exercise real control over developments outside the boundaries of their communities. They have been consulted on a continuing basis about most projects, and have managed to have some influence on individual project plans. They have functioned, however, as advocates or lobbies with no authority in law, and industrial companies have no obligation, other than moral, to seek or heed their advice. To community councils, this is

frustrating indeed, and many councillors perceive an inability to control or seriously influence any of the major developments which will affect the nature and quality of their lives and communities. Many residents of the region are dissatisfied with the way Nanisivik has developed, and feel that benefits to the people of the region, although significant, could have been higher. Many, particularly in Arctic Bay, are resentful of the use to which government funds have been put in developing a modern, well-serviced townsite at Nanisivik, physically the most impressive and attractive community in the region, although it is the newest. They know that the communities which have been in existence much longer lack many of the facilities provided at Nanisivik.

Community leaders are also concerned about the pace of development in the region, and feel that they need time to come to grips with the social challenges already confronting them as a result of rapid modernization over the past two decades.

Tourism has been identified as a regional industry which may expand considerably in the next two decades. Pond Inlet has already begun to

exploit the tourism potential of its area. Other communities can do the same. The requirements of the tourist industry are such that it is not as capital-intensive as other major projects proposed for the region. It is, therefore, an industry over which Inuit may, with motivation and sensitive assistance, maintain ownership and control. Imaginative approaches to the development of tourist attractions may identify ways in which the season, presently centred around a short summer fishing season, may be extended to make tourism a year-round industry. Moreover, the industry may become more viable as more and larger airports are built to serve non-renewable resource development projects; access to more potential attractions may develop in this way, and the frequency of flights from southern Canada in support of industrial development may increase, thereby providing better access for tourists. Tourism may provide jobs of the type that many Inuit prefer - outdoor jobs such as guiding, based in the communities, which will not require lengthy absences from home, as is usually the case with jobs in the non-renewable resource development sector. Tourism, if developed and controlled by

local resident entrepreneurs or co-operatives and handled with sensitivity may provide significant financial benefits to the communities.

The development of parks is supported by many Inuit, although most would insist on guarantees that hunting by Inuit not be prohibited in any parks to be established. To some people, parks are a way of prohibiting hydrocarbon and mineral exploration and production. To others, parks are seen as a means of stimulating the regional wage economy through tourism. There is a feeling that employment related to parks is culturally acceptable as it not only contributes to the cash economy but allows people to work in proximity to the land and animals.

Tourism, despite its potential benefits, is not a traditional activity, and Inuit should not have to feel that their only economic option for the future is to guide tourists through their lands and waters. Hunting, fishing and trapping will continue to be preferred activities and serious thought must be given by both government and native organizations to finding imaginative means to enhance the viability of these activities. Means of increasing inter-settlement trade should be explored and serious consideration should be given to the establishment of floor

prices on furs to cushion the Inuit economy from unpredictable fluctuations in fur prices.

The inability to exercise real control over developments, particularly those off-shore, is all the more frustrating because of the indecision and procrastination which surrounds comprehensive native claims. Inuit are aware of developments internationally in which some jurisdictions in northern environments have gained more control over developments affecting their territories. In particular, the achievement of Home Rule in Greenland is of interest to Inuit; perhaps more importantly, the ability of the council of the Shetland Islands to control the conditions under which off-shore oil development would take place, with shore facilities based in the Shetlands, has also aroused considerable interest. Inuit perceive comprehensive claims as a means by which they may gain control over developments in their lands and waters. In a region in which the population may almost double by the year 2000, residents are concerned that industrial projects provide real benefits to the region. Definitions of desired benefits include training and jobs, control over working and operating conditions, and the receipt of royalties from projects. Most Inuit do not oppose resource development per se,

but their support for specific projects is usually conditional upon the settlement of land claims in a satisfactory manner prior to the initiation of specific projects.

From left to right, age groupings are:
Pre-School Population (0 - 4)
School-Age Population (5 -14)
Potential Labour Force (15 - 64)
Elderly Population (65 +)

Arctic Bay	22.1	28.0	48.6	1.2
Pond Inlet	19.4	29.0	49.6	2.0
Resolute	11.4	34.1	54.5	
Nanisivik	8.8	12.4	78.8	
Grise Fiord	12.1	21.2	62.6	4.1
Baffin Region	14.8	28.3	55.5	1.4

Source: adapted from *Population Projections, Methodological Report, Northwest Territories 1978 to 1988*, Statistics Section, Department of Planning and Program Evaluation, Government of the Northwest Territories, 1979, Table A3, page 32.

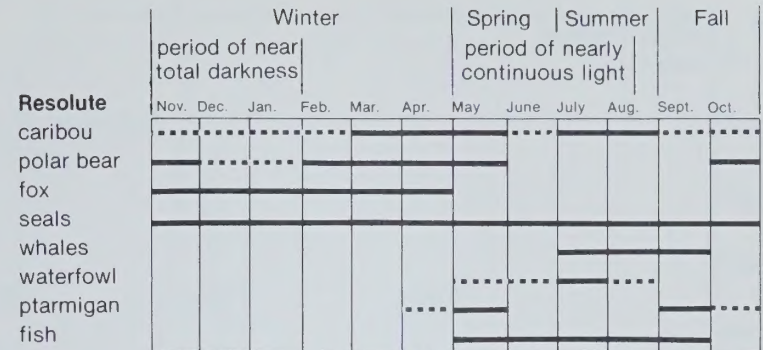
Figure 1 Percentage Population By Age Groups: Lancaster Sound Region, Grise Fiord and Baffin Region December 31, 1978

	Left - Inuit Right - Other	
Arctic Bay ¹	95.0	5.0
Pond Inlet ¹	91.8	8.2
Resolute ²	88.6	11.4
Nanisivik ¹	12.5	87.5
Grise Fiord ²	90.9	9.1

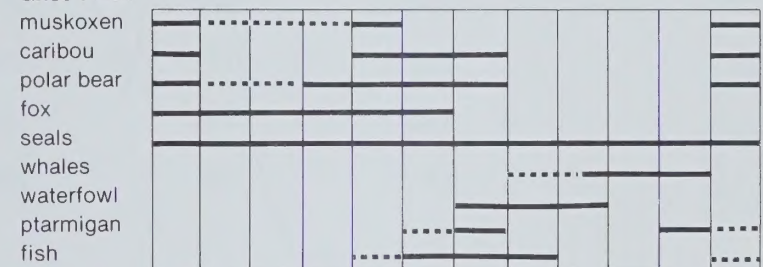
Sources: 1. *Population Projections, Methodological Report, Northwest Territories 1978 to 1988*, Statistics Section, Department of Planning and Program Evaluation, Government of the Northwest Territories, 1979, Table A2, page 30.

2. Letter, Bureau of Statistics, Executive Committee Secretariat, Government of the Northwest Territories, May 2, 1980.

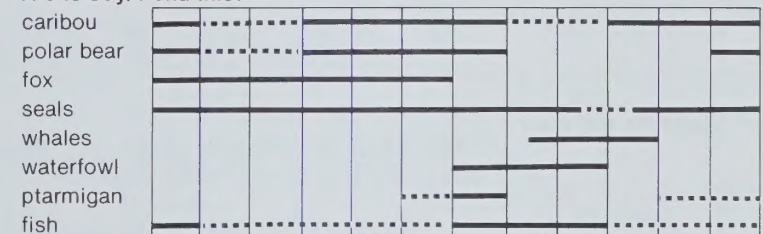
Figure 2 Percentage Ethnicity by Community: Lancaster Sound Region and Grise Fiord, December 31, 1978



Grise Fiord



Arctic Bay/Pond Inlet



Source: PetroCanada, *Arctic Pilot Project, Socio-Economic Statement North of 60° Latitude*, page 142.

Figure 3 Seasonality of Harvest

Source: Bureau of Statistics, Executive Committee Secretariat, Government of the Northwest Territories.

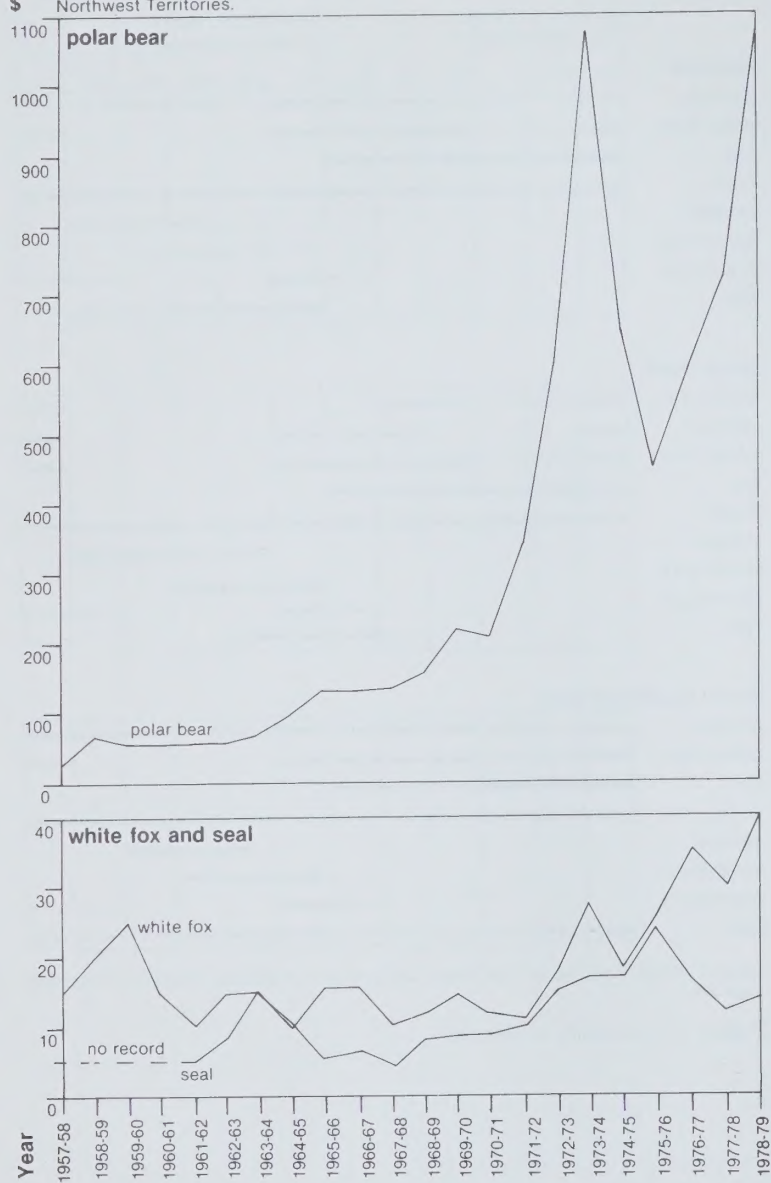


Figure 4 Average yearly values of Northwest Territories fur production by pelt — polar bear, white fox, seal: 1957-58 to 1978-79.

Table 1Population History by Community⁴

<u>Community</u>	<u>Population</u>					
	<u>1971¹</u>	<u>1976¹</u>	<u>1977¹</u>	<u>1978¹</u>	<u>1979²</u>	<u>1980³</u>
Arctic Bay	267	391	414	403	377	382
Pond Inlet	412	504	620	649	652	660
Resolute	189	223	181	167	177	153
Nanisivik	-	-	264	273	291	359
Grise Fiord	106	121	95	99	95	83

- Source: 1. Population Projections, Methodological Report, Northwest Territories 1978 to 1988, Statistics Section, Department of Planning and Program Evaluation, Government of the Northwest Territories, 1979, Table A1, page 27.
2. Population Estimates, Northwest Territories, December 31, 1979, Bureau of Statistics, Executive Committee Secretariat, Government of the Northwest Territories, 198, page 6.
3. Information received from Field Service Officers, Government of the Northwest Territories, April 1980.

Table 2

Components of Population Change

<u>Community</u>	<u>Population</u>		<u>Components of Change</u>			
	<u>1978</u>	<u>1979</u>	<u>Change</u>	<u>Births</u>	<u>Deaths</u>	<u>Migration</u>
Arctic Bay	403	377	-26	16	1	-41
Pond Inlet	649	652	+3	19	1	-15
Resolute	167	177	10	3	3	+10
Nanisivik	273	291	18	5	-	+13
Grise Fiord	99	95	-4	3	-	-7

Source: Population Estimates, Northwest Territories, December 31, 1979, Bureau of Statistics, Executive Committee Secretariat, Government of the Northwest Territories, 1989, page 8.

Table 3

Age Distribution, Dec. 31, 1978

<u>Age Group</u>	<u>Community</u>				
	<u>Arctic Bay¹</u>	<u>Pond Inlet¹</u>	<u>Resolute²</u>	<u>Nanisivik¹</u>	<u>Grise Fiord²</u>
0-4	89	126	19	24	12
5-9	59	86	27	21	9
10-14	54	102	30	13	12
15-19	35	68	17	21	18
20-24	35	53	20	38	15
25-29	46	59	10	43	5
30-34	25	53	14	31	5
35-39	20	26	10	25	5
40-44	15	19	6	19	5
45-49	10	19	10	19	9
50-54	0	6	4	13	0
55-59	5	13	0	6	0
60-64	5	6	0	0	0
65+	5	13	0	0	4

- Source: 1. Population Projections, Methodological Report, Northwest Territories 1978 to 1988, Statistics Section, Department of Planning and Program Evaluation, Government of the Northwest Territories, 1979, Table A3, page 32.
2. Letter, Bureau of Statistics, Executive Committee Secretariat, Government of the Northwest Territories, 2 May 1980.

Table 4

Estimated Median Ages: Lancaster Sound Region, Grise Fiord and Baffin Region

December 31, 1978

<u>Community</u>	<u>Median Age</u>
Arctic Bay	15.0
Pond Inlet	15.1
Resolute	17.2
Nanisivik	27.2
Grise Fiord	19.8
Baffin Region	18.3

Source: Letter, Bureau of Statistics, Executive Committee Secretariat, Government of the Northwest Territories, 2 May 1980.

Table 5

Population Projections by Community 1980-2000

	<u>Arctic Bay</u>	<u>Pond Inlet</u>	<u>Resolute</u>	<u>Nanisivik</u>	<u>Grise Fiord</u>	<u>Total</u>
% Annual Growth	3.0	3.0	3.3	0.9	3.3	
Year: 1980	382	660	153	359	83	1,637
1985	443	765	179	375	99	1,861
1990	513	887	210	393	117	2,120
1995	595	1,028	245	411	139	2,418
2000	690	1,192	287	429	165	2,763

Source: Percentage annual growth is from Population Projections, Community Tabulations, Northwest Territories, 1978 to 1988, Statistics Section, Department of Planning and Program Evaluation, Government of the Northwest Territories, 1979, page 13.

Table 6

Baffin Region Population
Age Distribution by Percentage and Median Age -
Current and Projected

<u>Age</u>	<u>1978</u>	<u>1988</u>
Population 0-15	43.1%	38.2 - 38.8
5-14 years	28.3%	23.1 - 23.5
15-64 years	55.5%	58.9 - 59.6
65 + years	1.4%	2.2 - 2.3
Median	18.3 years	20.4 - 20.6

Source: Population Projections, Community Tabulations, Northwest Territories 1978 to 1988,
Statistics Section, Department of Planning and Program Evaluation, Government of
the Northwest Territories, 1979, pages 4-6.

Table 7

Number of General Hunting Licenses Issued to Arctic Bay, Pond Inlet, Resolute and Grise Fiord residents -- 1970-71 to 1978-79

<u>Year</u>	<u>Arctic Bay</u>	<u>Pond Inlet</u>	<u>Resolute</u>	<u>Grise Fiord</u>
1970-71	50	83	22	37
1971-72	55	84	38	19
1972-73	53	84	16	22
1973-74	50	102	33	34
1974-75	63	118	38	36
1975-76	67	87	39	29
1976-77	69	111	45	43
1977-78	91	100	53	32
1978-79	70	90	36	22

Source: Government of the Northwest Territories,
Wildlife Service

Table 8

Restrictions on Hunting, Fishing and Trapping: Lancaster Sound Region¹

Species	Season	Limitations on Harvest by Inuit ²	Limitations on Harvest by Non-Inuit Residents and Tourists
seal	open	none	residents - unlimited as food for families and dogs tourists - 2, by licence
caribou	open to holders of General Hunting Licence	none	residents - 5 per year; closed May 15 - August 15 tourists - not allowed
fox	open November to April 30	none	residents - licence upon approval local Hunters and Trappers Association tourists - not allowed
polar bear	open October 1 to May 31 Local	quota allocated by community ³	residents - not allowed tourists - only if sports hunting program operated by Local Hunters' and Trappers' Association ⁴
muskoxen	open October 1 to March 30, except hunting by Grise Fiord hunters in Area A/1-3 (Devon Island) open August 1-31.	quota allocated by community ⁵	not allowed
beluga	open	none	not allowed
narwhal	open	quota allocated by community ⁶	not allowed
walrus	open	quota allotting 5 per hunter	not allowed
fish	open	none for domestic use; quotas established by community for commercial fishing	licence required; quota applies

¹ The Lancaster Sound Region as a whole is not a Wildlife Management Zone; it is included in many zones.

² Inuit require General Hunting Licence for caribou, fox, polar bear and muskoxen.

- 3 Polar bear quotas for 1979-80 are : Resolute - 38, Grise Fiord - 31, Arctic Bay - 12, Pond Inlet - 15. Quota of bears to be taken on Melville Island is divided annually among many communities.
- 4 No sports hunting programs presently in operation in the region.
- 5 Current muskox quotas, by management area and community are:
Resolute - Area A/1-4 (northern Prince of Wales Island) - 6 (3 males, 3 females); Area A/1-3 (northeastern Devon Island) - 7 (4 males, 3 females) in regular season.
- Grise Fiord - Area A/1-3 (northeastern Devon Island) - 4 (all males), August 1-31; Areas A/1-1 and A/1-2 (on Ellesmere Island, north of study area) - 18 (9 males, 9 females) and 2 (1 male, 1 female) respectively.
- 6 Quotas for narwhal are: Arctic Bay - 100, Pond Inlet - 100, Resolute - 20, Grise Fiord - 20, Creswell Bay - 12.
-

Source: Government of the Northwest Territories, Department of Renewable Resources, Wildlife Service, Baffin Region.

Table 9

Hunting, Fishing and Trapping: Reported Harvest of all Species, Reported and Estimated Values of Commercially Sold Furs and Ivory, Income Per Capita, 1974-75 to 1979-80

A - Arctic Bay

Species	Year ¹											
	1974-5		1975-6		1976-7		1977-8		1978-9		1979-80 ⁷	
	#	\$	#	\$	#	\$	#	\$	#	\$	#	\$
<u>Commercial Fur-Bearers²</u>												
Polar Bear ³	12	7,682	12	5,400	12	7,068	12	8,616	33	45,405		
Seal ⁴	1,288	23,820	1,793	53,841	1,211	34,511	745	9,860	1,030	14,891		
Fox ⁵	257	4,521	335	9,869	790	27,992	399	13,850	447	18,768		
Wolf	0	0	2	218	10	1,387	11	1,514	7	1,490		
<u>Other Fur-Bearers</u>												
Caribou ⁶	128		24		118		390		359			
<u>Marine Mammals⁷</u>												
Walrus ⁸	N/D		20		N/D		1		7		7	
Narwhal ⁹	N/D	N/D	167	28,851	115	25,181	40	11,269	65	19,647	33	10,266
Beluga ¹⁰	N/D		0		0		0		0		31	
<u>Birds¹¹</u>												
Geese	24		8		54		150		N/D			
Ducks	50		0		0		70		60			
Ptarmigan	78		2		178		300		248			
Fish ¹² (pounds)	5,000		6,000		5,000		10,000		5,000			
Total	Incomplete		98,179		96,139		45,109		100,201		Incomplete	
Income Per Capita	N/D		N/D		246		109		249		Incomplete	

B - Pond Inlet

Species	Year											
	1974-5		1975-6		1976-7		1977-8		1978-9		1979-80	
	#	\$	#	\$	#	\$	#	\$	#	\$	#	\$
<u>Commercial Fur-Bearers</u>												
Polar Bear	13	8,320	14	6,300	15	8,835	22	19,450	19	20,710		
Seal	1,495	28,233	1,634	40,610	1,730	39,793	479	6,425	663	10,199		
Fox	180	3,231	56	1,508	276	10,301	131	3,845	323	14,384		
Wolf	14	1,180	4	436	17	2,357	26	3,752	27	5,747		
<u>Other Fur-Bearers</u>												
Caribou	630		599		123		521		605			
<u>Marine Mammals</u>												
Walrus	N/D		N/D		6		6		0		2	
Narwhal	N/D	N/D	77	13,275	125	26,928	99	27,317	150	46,020	94	28,851
Beluga	N/D		0		0		0		0		2	
<u>Birds</u>												
Geese	94		190		55		85		84			
Ducks	48		37		4		10		N/D			
Ptarmigan	363		708		230		286		444			
Fish (pounds)	30,000		30,000		30,000		30,000		30,000			
Total		Incomplete		62,129		88,214		60,789		97,060		Incomplete
Income Per Capita		N/D		N/D		175		98		150		Incomplete

C - Resolute

Species	Year											
	1974-5		1975-6		1976-7		1977-8		1978-9		1979-80	
	#	\$	#	\$	#	\$	#	\$	#	\$	#	\$
<u>Commercial Fur-Bearers</u>												
Polar Bear	34	21,760	47	21,150	33	19,437	41	29,438	38	40,000		
Seal	7	73	187	3,473	247	4,565	54	556	11	120		
Fox	224	3,940	172	4,417	524	18,502	522	15,262	331	12,998		
Wolf	3	188	12	1,308	1	40	3	310	3	655		
<u>Other Fur-Bearers</u>												
Caribou	57		151		74		90		120			
<u>Marine Mammals</u>												
Walrus	N/D		N/D		3		2		0		3	
Narwhal	N/D	N/D	0	0	15	3,257	10	3,009	26	7,965	14	4,071
Beluga	N/D		11		11		17		2		6	
<u>Birds¹¹</u>												
Geese	0		34		19		10		6			
Ducks	49		150		29		30		21			
Ptarmigan	27		243		130		60		62			
Fish (pounds)	3,000		3,000		3,000		3,000		3,000			
Total		Incomplete		30,348		45,801		48,575		61,738		Incomplete
Income Per Capita		N/D		N/D		205		268		370		Incomplete

D - Grise Fiord¹³

Species	Year											
	1974-5		1975-6		1976-7		1977-8		1978-9		1979-80	
	#	\$	#	\$	#	\$	#	\$	#	\$	#	\$
<u>Commercial Fur-Bearers</u>												
Polar Bear	37	23,680	34	15,300	33	19,437	42	30,156	33	36,295		
Seal	654	11,183	831	11,474	707	14,963	316	3,472	10	133		
Fox	160	2,814	74	1,199	305	10,770	186	5,459	208	6,739		
Wolf	1	60	4	705	5	580	7	963	1	213		
<u>Other Fur-Bearers</u>												
Caribou	41		61		17		40		40			
<u>Marine Mammals</u>												
Walrus	N/D		20		23		3		25		3	
Narwhal	N/D	N/D	0	0	11	2,879	0	0	0	0	12	3,540
Beluga	N/D		10		15		11		15		12	
<u>Birds¹¹</u>												
Geese	7		93		21		10		6			
Ducks	96		198		108		30		34			
Ptarmigan	81		567		116		60		61			
<u>Fish (pounds)</u>	<u>2,000</u>		<u>2,000</u>		<u>2,000</u>		<u>2,000</u>		<u>2,000</u>		<u> </u>	
<u>Total</u>	Incomplete		28,678		48,629		40,050		43,380		Incomplete	
<u>Income Per Capita</u>	N/D		N/D		402		422		438		Incomplete	

Notes and Sources (Table 9)

- ¹The reporting year is July 1 to June 30; this coincides with the validity of a General Hunting Licence, and the period covered by Fur Traders' Records and Fur Export Tax Returns.
- ²For fox, seal and wolf, two sources of harvest data have been used: (i) Fur Export Tax Returns, which do not indicate price paid, and (ii) Fur Traders' Records, which record price paid. These records do not indicate furs used domestically (which may be significant for seals and wolves) or those sold and used locally. For polar bear, an additional data source has been used, the records of the Big Game Management Branch of the Wildlife Service, Department of Renewable Resources, Government of the Northwest Territories, Yellowknife, which monitors the polar bear quota, but does not maintain price records. Recognizing that under-reporting of harvest occurs, the highest number reported by any of the above sources has been used. Values reported for harvest data taken from Fur Export Tax Returns and Big Game Management records are computed using a yearly average value for each species for the Northwest Territories as a whole, taken from the Northwest Territories Fur Production and Value Tables. Values used for harvest data taken from Fur Traders' Records are those reported on those records. There are four exceptions, where a higher harvest was reported on the Fur Export Tax Returns, but a significantly higher value reported for a lesser harvest on Fur Traders' Records. (Pond Inlet, 1977-8 - polar bear, 1974-5 - wolf; Arctic Bay, 1977-8 - fox, 1978-9 - polar bear). In these cases, the higher value has been used.
- ³Data are considered highly reliable. Recent reported takes in excess of local quotas may be from sharing of the Melville Island quota.
- ⁴Figures do not account for seals used locally, sold for local use, or damaged and unsaleable. Actual seal harvest may be considerably higher than reported. Average price, when used, is that for ringed seal. Most seals harvested are ringed seals; for example, in 1977-8 in Arctic Bay, of the take of 745 seals, 741 were ringed seals, 3 harp seals and 1 other.
- ⁵Fox are not used locally for clothing. Export data do not account for local sales or damaged skins, but these are felt to be minimal. Average price, when used, is that for white fox. Most fox taken are white fox; for example, in 1976-7 in Arctic Bay, of the take of 790 fox, 776 were white, 1 black, 7 blue and 6 red.
- ⁶Data for caribou harvest to 1976-7 are from General Hunting decrease (GHL) returns. Many sources of error are present, including (i) not all licenses are returned, (ii) declarations are made from memory, and (iii) individuals may deliberately underestimate their

harvest, in fear of imposition of quotas or other restrictive action. GHJ data are considered serious underestimates of harvest, with the degree of underestimation irregular and unpredictable. For 1977-8 and 1978-9, data are from the Wildlife Service, Government of the Northwest Territories, Frobisher Bay.

⁷For marine mammals, harvest data were provided by the federal Department of Fisheries and Oceans. Frobisher Bay, NWT. Harvest data for non-fur-bearing marine mammals are kept on a calendar year basis. In recording this data on the table, the assumption is here made that almost all non-fur-bearing marine mammals are taken after July 1 of the calendar year in which they are reported, either in open-water hunting or in on-ice hunting prior to break-up, at the floe-edge or in leads. This assumption may be least valid for Pond Inlet where open water often occurs at or near the community considerably earlier than in the other communities. In following this assumption, therefore, for Arctic Bay, 167 narwhal taken during the calendar year 1975 are recorded on the table for 1975-6.

⁸No attempt has been made to estimate the proportion of tusked walrus killed, or the value of walrus tusks.

⁹In computing the value of narwhal per community, the assumption is made that, on average, two-thirds of whales taken are tusked (author's assumption), that the average weight of a tusk is 11.8 lb. (Finley, 1980), and that 80% of tusks taken are unbroken (Finley, 1980). Prices paid for the calendar years 1975 through 1979 averaged, per pound, \$25, \$32, \$40, \$45 and \$45 respectively for unbroken tusks, and \$10, \$10, \$15, \$15 and \$15 for broken tusks (author's records). Re the narwhal harvest attributed to Resolute, from 1976 on, separate statistics are available for Resolute itself, and for Creswell Bay. These are: 1976, Resolute - 0, Creswell Bay - 15; 1977, Resolute - 0, Creswell Bay - 10; 1978, Resolute - 14, Creswell Bay - 12; 1979, Resolute - 2, Creswell Bay - 12.

¹⁰All beluga reported were taken by Resolute hunters, except for 1978, Resolute - 1, Creswell Bay - 1.

¹¹The comments on source and reliability of data under note 6 (caribou) apply here.

¹²The amount of fish taken is an estimate, in pounds, made by the fish and wildlife service, Government of the Northwest Territories, Frobisher Bay, and does not separate the commercial from the domestic take.

¹³No data is available on the harvest of muskoxen by Grise Fiord hunters.

Table 10

Average Edible Weight per Animal by Species (lb.)

Polar Bear ¹	267
Caribou	81
Beluga	440
Narwhal	440
Walrus	308
Seal - Resolute	46
Grise Fiord	55
Arctic Bay	48
Pond Inlet	48
Geese	4.0
Ducks	2.4
Ptarmigan	0.7
Fish (Arctic Char)	0.7

Source: Polar Bear - Pavich, Mary. The Estimation of the Imputed Value of Tranditional Activities, Northwest Territories and Yukon, 1967-1974.
Data Management Division, Northern Economic Planning Branch, DIAND.

Others - adapted from PetroCanada. Arctic Pilot Project Socio-Economic statement North of 60° Latitude.

Table 11

Average Annual Harvest¹, Average Annual Edible Weight² of "Country Food" Available in Pounds, by Species and Community; and Average Annual Per-Capita³ Availability of Country Food, in Pounds, by Community

	Arctic Bay			Pond Inlet			Resolute			Grise Fiord		
	Average Harvest	Annual Edible Weight		Average Harvest	Annual Edible Weight		Average Harvest	Annual Edible Weight		Average Harvest	Annual Edible Weight	
Polar Bear	16	4,272		17	4,539		39	10,413		36	9,612	
Seal	1,213	58,224		1,200	57,600		1638	7,498		6279	34,485	
Caribou	2494	20,169		496	40,176		98	7,938		40	3,240	
Walrus	9	2,772		4	1,232		2	616		18	5,544	
Narwhal	97	42,680		113	49,720		13	5,720		3	1,320	
Beluga	0	0		0	0		8	3,520		13	5,720	
Geese	765	304		102	408		13	52		27	108	
Ducks	60	144		437	103		56	134		93	223	
Ptarmigan	2016	141		406	284		93	65		177	124	
Fish	-	6,200		-	30,000		-	3,000		-	2,000	
Total Pounds ¹⁰		134,906			184,062			38,956			62,376	
Per-Capita Availability (Pounds) ¹¹		326			297			215			657	

Notes and Sources:

¹Average annual harvest for 5-year period, 1974-5 through 1978-9, as per Table 9, except as noted

²Individual weights of species, as per Table 10

³Calculated from 1977 populations

⁴1975-6 excluded from average

⁵1975-6 excluded from average

⁶1975-6 excluded from average

⁷1976-7, 1977-8 excluded from average

⁸1974-5, 1978-9 excluded from average

⁹1978-9 excluded from average

¹⁰In kilograms, Arctic Bay - 61,321, Pond Inlet - 83,665, Resolute - 17,707, Grise Fiord - 28,353

¹¹In kilograms, Arctic Bay - 148, Pond Inlet - 135, Resolute - 98, Grise Fiord - 299

Table 12

Value per Pound (Kilogram) of Country Food

<u>Community</u>	<u>Beef Price per lb. (kg.)¹</u>	<u>Retail Mark-up²</u>	<u>Transportation per lb. (kg.)</u>	<u>Total Cost per lb. (kg.)</u>
Arctic Bay	\$1.50 (3.30)	20%	\$0.80 (1.76) ³	\$2.68 (5.90)
Pond Inlet	1.50 (3.30)	20%	0.95 (2.09) ⁴	2.83 (6.23)
Resolute	1.50 (3.30)	20%	0.70 (1.55) ⁵	2.58 (5.68)
Grise Fiord	1.50 (3.30)	20%	1.43 (3.15) ⁶	3.31 (7.28)

¹Price in southern Canada, as per PetroCanada, 1980.

²Current Hudson's Bay Company pricing policies allow for a mark-up on the southern cost price, but not on transportation costs.

³Freight charges from Montreal to Arctic Bay are \$0.80/lb. (\$1.76/kg.):
Montreal - Nanisivik by air - \$0.70/lb. (\$1.55/kg.); Nanisivik - Arctic Bay
by truck - \$0.10/lb.

⁴Air freight from Timmins, Ontario to Pond Inlet is \$0.95/lb.

⁵Air freight from Montreal to Resolute is \$0.70/lb. (\$1.55/kg.).

⁶Air freight from Montreal to Grise Fiord is \$1.43/lb. (\$3.15/kg.):
Montreal - Resolute as in ⁴ above; Resolute - Grise Fiord - \$0.70/lb.

Sources: Beef price from PetroCanada, Arctic Pilot Project, Supplementary
Socio-Economic Regional Setting Information, April 1980.

Transportation costs from regional airlines and Hudson's Bay Company.

Table 13

Imputed Value of Country Food Available

Community	Edible Weight Average Harvest in lb. (kg.) ¹	Value per lb. (kg.) ²	Total Value	Value per Capita ³
Arctic Bay	134,906 (61,321)	\$2.68 (5.90)	\$361,548.	\$959
Pond Inlet	184,062 (83,665)	2.83 (6.23)	520,895.	799
Resolute	38,956 (17,707)	2.58 (5.68)	100,506	568
Grise Fiord	62,376 (28,353)	3.31 (7.28)	206,465.	2,173

Notes and Sources

¹From Table 11.

²From Table 12.

³Based on December 1979 Populations.

Table 14

Government of the Northwest Territories Funding and Estimated Income of Assisted Outpost Camps in the Lancaster Sound Region, 1978-79 Fiscal Year

Camp	<u>Ikpeen</u>	<u>Ipitalik</u>	<u>Igloojuat</u>	<u>Creswell Bay</u>
Families/Population	1/9	2/8	2/10	2/8
NWT Funding:				
Transportation	7,800	175	0	8,885
Cabins	9,518	7,012	5,422	3,615
Fuel Oil	1,492	877	0	2,079
Supplies	1,754	877	0	0
Charters	0	0	0	0
TOTAL	20,564	8,941	5,422	14,579
Estimated Cash Income	8,000 ¹	6,500 ¹	3,450 ²	27,088 ²
All Sources				
Number Years Funded	1	1	2	3

1 Income Sources: Hunting, trapping, carving, family allowances

2 Income Sources: As per Table 15, 9 months, April 1 - December 31, 1978.

Source: Government of the Northwest Territories, Wildlife Service, Baffin Region.

Table 15

Income by Source for Igloojuat and Creswell Bay Camps,

April 1 - December 31, 1978

Hunting/Trapping	2,500	14,500
Carving	-	300
Welfare	-	1,112
Wages	-	1,500
UIC	-	-
Pensions	-	-
Incentive Grants	211	376
Commercial Fishing	379	5,000
Family Allowances	360	1,500
Other	-	-
ARDA Grants	-	2,800
Sub-Total	<u>3,450</u>	<u>27,088</u>
Meat Replacement Value ¹	<u>3,280</u>	<u>3,500</u>
TOTAL	6,730	30,588

79

¹ Meat replacement costs are estimated at \$1.50/lb.

Source: Government of the Northwest Territories,
Wildlife Service, Baffin Region.

Table 16

Home Communities of Northern Workers at Nanisivik,
Jan. 1, 1975 - Dec. 31, 1978.

Community	No.	%
Arctic Bay	53	18
Frobisher Bay	58	19
Hall Beach	9	3
Iglolik	57	19
Clyde River	13	4
Pangnirtung	20	7
Pond Inlet	16	5
Broughton Island	1	1
Cape Dorset	10	3
Lake Harbour	6	2
Gjoa Haven	10	3
Coppermine	7	2
Rankin Inlet	16	5
Resolute Bay	3	1
Yellowknife	3	1
Baker Lake	1	1
Cambridge Bay	4	1
Spence Bay	2	1
Suglug	1	1
Eskimo Point	2	1
Grise Fiord	3	1
Payne Bay	2	1
Whale Cove	2	1
Total	299	100

1 The home communities of two workers are not available; total 301

Source: Baffin Region Inuit Association (BRIA), 1979: 63

Table 17

Number of Inuit Employees of the Nanisivik Mine
By Community and By Year, as of November 9, 1978

Community	1975	1976	1977	1978	Total
<u>Lancaster Sound Region</u>					
Arctic Bay	30	22	28	17	97
Pond Inlet	3	9	3	3	18
Resolute Bay	--	2	2	--	4
Sub-total	33	33	33	20	119
<u>Other</u>					
Iqloolik	27	37	22	12	98
Clyde River	1	8	3	3	15
Hall Beach	5	6	3	2	16
Frobisher Bay	10	26	23	17	76
Pangnirtung	4	5	10	6	25
Broughton Island	1	1	--	--	2
Cape Dorset	--	8	3	2	13
Suglug	--	1	--	--	1
Lake Harbour	--	2	2	5	9
Gjoa Haven	--	6	6	2	14
Coppermine	--	5	3	1	9
Rankin Inlet	1	6	12	7	26
Baker Lake	--	1	--	--	1
Cambridge Bay	--	3	3	2	8
Spence Bay	--	2	1	--	3
Eskimo Point	--	--	2	1	3
Payne Bay	--	--	2	--	2
Grise Fiord	--	--	3	--	3
Whale Cove	--	--	--	1	1
Yellowknife	--	1	--	2	3
Sub-total	49	118	98	63	328
Total	82	151	131	83	447 ¹

1 Because some men were employed during all four years, and some during parts of at least two years, total is higher than 301 referred to in Table 1.

Source: adapted from BRIA, 1979: 91

Table 18

Occupations at which Inuit Workers
have been Employed at Nanisivik
when first Employed, 1975-1978

Occupation	No.
Labourers	94
Garage Labourer	6
Carpentry	4
Mill Labourer	25
Underground Helper	16
Trade Helper	8
Crusher Helper	3
Plumber Helper	2
Mill Helper	8
Carpenter Helper	3
Mechanic Helper	2
Electrical Helper	6
Welding Helper	1
Partsman Apprentice	1
Apprentice Millwright	1
Mechanic Apprentice	1
Electrical Apprentice	1
Welding Apprentice	1
Plumber Apprentice	2
Operator Trainee	1
Construction	6
Carpenter	25
Heavy Equipment Operator	25
Mechanic	1
Crusher Operator	1
Townsite Maintenance	4
Mill Operator	2
Welder	1
Furnace Repairman	1
Plumber	2
Light Equipment Operator	3
Warehouseman	19
Mobile Equipment Operator	2
Painter	2
Underground Driver	2
Jumbo Driller	1
Clerk	2
Administration	5
Surveyor's Assistant	2
Safety Officer	1
Catering	5
Day Care	1

Table 19

Wages of Inuit Nanisivik Employees By Community and By Year

Community	1976			1977			1978		
	Mean	Workers	Total	Mean	Workers	Total	Mean	Workers	Total
<u>Lancaster Sound Region</u>									
Arctic Bay	11,820	15	177,300	6,715	27	181,305	11,265	17	191,505
Pond Inlet	12,000	2	24,000	7,400	4	29,600	8,967	3	26,901
Resolute	5,750	2	11,500	1,700	2	3,400	--	--	--
Sub-total	11,200	19	212,800	6,494	33	214,305	10,920	20	218,406
<u>Other</u>									
Grise Fiord	--	--	--	2,700	3	5,100	--	--	--
All other	8,755	29	253,900	5,685	95	540,095	7,971	62	494,174
Sub-total	8,755	29	253,900	5,563	98	545,195	7,971	62	494,174
Total	9,723	48	466,700	5,798	131	759,500	8,690	82	712,580

Source: adapted from BRIA, 1979: 132-3

Table 20

Employment record of Inuit, Arctic Bay, 1976¹

Current occupation	Number listed	Level of current employment		
		Full time	Part time	Seasonal/ casual
<u>(Inuit males)</u>				
Heavy equipment operator, assistant, apprentice	15	7	7	1
Trucker driver, driver's helper	8	5	1	2
Maintenance man, janitor	4	3		1
Material handler	2	2		
Mechanic, mechanic's helper	5	4	1	
Carpenter's helper	3	2	1	
Service unit operator, oil well worker	1	1		
Electrical helper	1		1	
Welder	1	1		
Labourer	17	5	1	6
Administrator	1			1
Clerk	3	2	1	
Teacher's aide	1	1		
Interpreter	1	1		
Hunter and trapper	9	2	7	
Not classified	8	1		7
SUB-TOTAL	80	37	1	26
				16

Table 20 (Continued)

Current occupation	Level of current employment				Not classified
	Number listed	Full time	Part time	Seasonal/casual	
<u>(Inuit females)</u>					
Clerk	5	2	2	1	
Janitor, cleaning lady, domestic	10	1	7	1	1
Radiotelephone operator	1			1	
Interpreter	5	2	1		2
Painter's helper	1				1
Cook's helper	1				1
Not classified, other	56	1	2	1	52
SUB-TOTAL	79	6	12	4	57
TOTAL	159	43	13	30	73

1 From Petro Canada, Arctic Pilot Project, Socio-Economic Statement North of 60° Latitude (original data from Territorial Employment Record and Information System (TERIS), Government of the Northwest Territories.

Table 21

Employment record for Inuit, Pond Inlet, 1976¹

Current occupation	Level of current employment			
	Number listed	Full time	Part time	Seasonal/casual/Not classified
<u>(Inuit males)</u>				
Heavy equipment operator, assistant, apprentice	7		1	3 3
Trucker driver, driver's helper	12	1		8 3
Maintenance man, janitor	6	6		
Mechanic, mechanic's helper	4	3		1
Carpenter, carpenter's helper	8	2		4 2
Painter, painter's helper	1			1
Welder	1			1
Electric power and wire communications worker	4			1 3
Gas pumping station operator	1	1		
Labourer	27	4	1	12 10
Routabout	5			2 3
Physical science technologist	2	1		1
Manager	1	1		
Clerk	5	3		1 1
Police man	1	1		
Interpreter	1			1
Teacher, teacher's aide	2	1		1
Case aide	1	1		
Not classified	19	2		17
SUB-TOTAL	108	27	2	35 44

Table 21 (Continued)

Current occupation	Level of current employment			
	Number listed	Full time	Part time	Seasonal/casual
(Inuit females)				
Clerk	9	1		1
Janitor, domestic	32	2	5	3
Teacher, teacher's aide	6	4		
Cook, cook's assistant	8	2		3
Labourer	10	1	1	1
Physical science technologist	2	1		1
Interpreter	1		1	
Not classified	39			
SUB-TOTAL	107	11	7	9
TOTAL	215	38	9	44

1 From Petro Canada, Arctic Pilot Project, Socio-Economic Statement North of 60° Latitude (original data TERIS)

Table 22

Employment record for Inuit, Resolute, 1976¹

Current occupation	Level of current employment			
	Number listed	Full time	Part time	Seasonal/casual/Not classified
<u>(Inuit males)</u>				
Heavy equipment operator, assistant, apprentice	2	2		
Trucker driver, driver's helper	6	4	1	1
Maintenance man, janitor	3	3		
Mechanic, mechanic's helper	2	2		
Carpenter	4	3	1	
Labourer	6	4	2	
Electric power and wire communications worker	1	1		
Manager, administrator	6	2	1	3
Clerk	4	3		1
Hunter and trapper	2	1		1
Diesel plant operator	2	2		
Not classified	9			9
SUB-TOTAL	47	27	5	1 14

Table 22 (Continued)

Current occupation	Level of current employment			
	Number listed	Full time	Part time	Seasonal/casual/Not classified
<u>(Inuit females)</u>				
Clerk-secretary	11	3	8	
Administrator	2	2		
Laundry woman-janitorde	9	4	3	2
Teacher's aide	1	1		
Not classified	20		1	19
SUB-TOTAL	43	10	12	21
TOTAL	90	37	17	1 35

¹ From Petro Canada, Arctic Pilot Project, Socio-Economic Statement North of 60° Latitude (original data TERIS)

Table 23

Employment record for Inuit, Grise Fiord, 1976¹

Current occupation	Level of current employment				Not classified
	Number listed	Full time	Part time	Seasonal/casual	
<u>(Inuit males)</u>					
Heavy equipment operator, assistant, apprentice	2	1		1	
Trucker driver, driver's helper	4	3	1		
Maintenance man, janitor	4	4			
Material handler	3	2	1		
Construction labourer	4	1		2	1
Mechanic's helper	1	1			
Manager	1		1		
Clerk	3	1	2		
Policeman	1	1			
Hunter and trapper	4	3	1		
Not classified	5		1		4
SUB-TOTAL	32	17	7	3	5

Table 23 (Continued)

Current occupation	Level of current employment			
	Number listed	Full time	Part time	Seasonal/casual Not classified
<u>(Inuit females)</u>				
Heavy equipment operator	1			1
Maintenance, cleaning lady	3	1	2	
Communications worker	1	1		
Teacher	1	1		
Secretary, clerk	3		3	
Not classified	15			15
SUB-TOTAL	24	3	5	1
TOTAL	56	20	12	4
				20

1 From Petro Canada, Arctic Pilot Project, Socio-Economic Statement North of 60° Latitude (original data TERIS)

Table 24

Number of Inuit employees¹ by employer, 1979

Employer	Arctic Bay	Pond Inlet	Resolute	Grise Fiord	Totals
NWT Government	572	432	3	2	105
Local Co-operatives	13	41	17	5	76
Settlement/Hamlet Council	35	30	1	1	67
Hudson's Bay Company	292	14	5	0	48
Panarctic Oils Ltd.	18	43	0	0	22
Government of Canada	7	8	1	2	18
Nanisivik Mines	26	0	0	0	26
Steltner Development Co.	-	9	-	-	9
Housing Association	16	17	2	1	36
Other	35	45	36	7	123
TOTALS	236	211	65	18	530

1 For each community, there is some double-counting as individual respondents have often reported each employer for whom they have worked part-time.

2 Reflects much casual or part-time employment.

3 This figure is unreliably low.

Source: TERIS, Government of the Northwest Territories.

Table 25

Municipal Positions¹ and Salaries²: Hamlets
of Arctic Bay and Pond Inlet, Fiscal Year 1979-80

<u>ARCTIC BAY</u>	
Secretary-Manager	\$22,269
Ass't Secretary-Manager	\$16,200
Interpreter - Bookkeeper	\$16,360
Hamlet Foreman	\$27,765
Mechanic #1	\$21,081
Mechanic #2	\$19,296
Heavy Equipment Operator	\$19,853
Water Truck Operator	\$16,360
Water Truck Helper	\$11,101
Sewage Operator	\$16,360
Sewage Helper	\$14,607
TOTAL	<u>\$201,252</u>
<u>POND INLET³</u>	
Secretary-Manager	\$23,027
Ass't. Secretary-Manager	\$17,920
Clerk/Interpreter/Translator	\$14,334
Building Maintainer	\$22,209
Mechanic Foreman	\$26,719
Mechanic	\$20,027
Assistant Mechanic	\$17,314
Municipal Service Worker	\$15,386
Municipal Service Worker	\$15,386
Municipal Service Worker	\$14,505
Municipal Service Worker	\$14,505
Municipal Service Worker	\$15,386
Municipal Service Worker	\$14,505
Municipal Service Worker	\$15,386
Road Maintainer	\$17,473
Maintainer/Handyman	\$15,000
TOTAL	<u>\$279,082</u>

- 1 All presently filled by Inuit, except Secretary-Manager position in Arctic Bay.
- 2 Salaries include settlement allowances.
- 3 Hamlet employees in Pond Inlet are on a GNWT - equivalency pay scale. Arctic Bay is not.

Source: Department of Local Government, Government of
the Northwest Territories, Frobisher Bay.

Table 26

School Enrolment 1975-1980

	<u>1975-6</u>	<u>1976-7</u>	<u>1977-8</u>	<u>1978-9</u>	<u>1979-80</u>
Arctic Bay	110	114	116	114	110
Pond Inlet	174	170	178	185	199
Resolute	57	64	69	57	61
Grise Fiord	35	36	26	26	19
Nanisivik ¹	—	<u>35</u>	<u>50</u>	<u>65</u>	<u>62</u>
Total	376	419	439	447	451

¹ The school in Nanisivik opened in October 1976.

Source: School Principals

Table 27

Enrolment in Highest Grade Offered, 1975-1980

	<u>1975-6</u>	<u>1976-7</u>	<u>1977-8</u>	<u>1978-9</u>	<u>1979-80</u>
Arctic Bay grade enrolled	8	8	9	8	9
Pond Inlet grade enrolled	9	9	9	9	9
Resolute grade enrolled	13	11	12	10	16
Grise Fiord grade enrolled	8	8	8	8	8
Nanisivik grade enrolled	3	9	8	5	3
	9	8	8	8	8
	2	4	3	1	2
	6	6	8	8	8
	4	4	1	8	1

Source: School Principals

Table 28

School Enrolment by Ethnicity 1979-80

	<u>Inuit</u>	<u>Non-Inuit</u>
Arctic Bay	103	7
Pond Inlet	196	3
Resolute	57	4
Grise Fiord	19	0
Sub-total	<u>375</u>	<u>14</u>
Nanisivik	35	27
Total	<u>410</u>	<u>41</u>

Source: School Principals

Table 29

Qualified Teaching Staff by Ethnicity 1979-80

	<u>Inuit¹</u>	<u>Non-Inuit</u>	<u>Total</u>
Arctic Bay	0	6	6
Pon Inlet	1	8	9
Resolute	0	3	3
Grise Fiord	0	1	1
Nanisivik	<u>0</u>	<u>3</u>	<u>3</u>
Total	1	21	22

1 Graduates of Teacher Education Program; excludes Classroom Assistants.

Source: School Principals.

Table 30

Students Attending Regional High School, Frobisher Bay, 1979-80

	<u>REGISTERED SEPTEMBER 79</u>	<u>CURRENT (APRIL 80)</u>
Arctic Bay	1	1
Pond Inlet	8	7
Resolute	15	10
Grise Fiord	3	0
Nanisivik	3	3

Source: Gordon Robertson Educational Centre, Frobisher Bay.

Table 31

Average Income and Income Groupings by Percentage of Tax Returns filed for
Group of N.W.T. Settlements including Lancaster Sound Region, 1974-1978

<u>Year</u>	<u>Average Income of Tax Returns</u>	<u>Income Groupings by Percentage Tax Returns Filed</u>									<u>Returns Filed</u>
		<u>Under \$2,000</u>	<u>2,001- 4,000</u>	<u>4,001- 6,000</u>	<u>6,001- 8,000</u>	<u>8,001- 10,000</u>	<u>10,001- 12,000</u>	<u>12,001- 15,000</u>	<u>15,001- 20,000</u>	<u>20,001 +</u>	
1974 ¹	\$7,497	22.3	16.3	13.0	10.8	8.2	7.9	7.9	8.2	5.4	2,650
1975 ¹	8,726	17.9	16.3	12.1	9.9	7.5	6.1	11.4	10.2	8.6	2,823
1976 ²	9,856	12.7	13.4	13.1	12.9	8.3	5.5	9.3	13.9	10.9	1,232
1977 ²	11,426	11.5	11.8	12.4	9.8	8.9	6.0	10.1	12.3	17.2	1,283
1978 ²	9,775	27.0	12.3	8.5	8.3	6.7	5.3	5.8	9.5	16.6	1,728

¹Group includes Alert, Arctic Bay, Broughton Island, Cambridge Bay, Cape Christian, Cape Dorset, Clyde River, Eureka, Frobisher Bay, Gjoa Haven, Grise Fiord, Hall Beach, Holman Island, Igloolik, Isachsen, Lake Harbour, Mould Bay, Pangnirtung, Pond Inlet, Port Burwell, Repulse Bay, Resolute, Resolution Island, Sachs Harbour.

²Group includes above communities, except Cambridge Bay, Frobisher Bay, Gjoa Haven, Holman Island, Pangnirtung, Repulse Bay, Sachs Harbour.

Source: Revenue Canada

Table 32

Average Incomes of Individuals Filing Income Tax Returns,
Group of N.W.T. Communities Including Lancaster Sound Region,
N.W.T., Canada, 1974-1978

<u>Year</u>	<u>Communities</u>	<u>N.W.T.</u>	<u>Canada</u>
1974	7,497	8,230	8,170
1975	8,726	9,650	9,223
1976	9,856	10,978	10,313
1977	11,426	11,921	11,114
1978	9,775	11,412	10,741

Source: Revenue Canada

Table 33

Wages, Salaries, Honoraria Paid by Community Councils, 1977-8 and 1979-9
Fiscal Years (Except as Noted)

	Arctic Bay ¹			Pond Inlet ¹			Resolute ²		Grise Fiord ²	
	15 months ending March 1978	1977- 1978 pro-rated	1978- 1979	15 Months ending March 1978	1977- 1978 pro-rated	1978- 1979	1977- 1978	1978- 1979	1977- 1978	1978- 1979
Honorariums	4,085		3,465	9,463		9,100	1,020	1,075	425	410
Salaries/Wages										
- general	256,642		184,869	309,560		304,156	N/A	N/A	57,990	50,537
- contract funded	42,210		8,227	43,254		46,819	27,000	30,000		
Total	302,937	242,350	196,561	362,277	289,822	360,175	28,020	31,075	58,415	50,947

¹Hamlets

²Settlements

Source: Department of Local Government, Government of the Northwest Territories, Frobisher Bay, NWT

Table 34

Estimate of Transfer Payments to Communities, 1979¹

Source	Arctic Bay	Pond Inlet	Resolute	Grise Fiord
Family Allowances ²	52,560	83,520	20,160	10,080
Old Age Security	850	2,210	0	680
Guaranteed Income Supplement ³	700	1,820	0	560
Total	54,110	87,550	20,160	11,320
Per Capita	144	134	114	119

¹Age groupings based on December 31, 1978 populations.

²For purposes of estimating, the assumption is made that $\frac{1}{2}$ of those aged 15-19 are under 18 and still dependent on parents for their support, thus beneficiaries of family allowances

³The assumption is made that all those who receive OAS also receive GIS

Source: Information provided by Health and Welfare Canada.

Table 35

Social Assistance Paid, By Fiscal Year, 1974-79

<u>Year</u>	<u>Arctic Bay</u>	<u>Pond Inlet</u>	<u>Resolute</u>	<u>Grise Fiord</u>
1974-75	12,849	41,723	10,971	5,071
1975-76	51,558	42,707	12,565	5,549
1976-77	37,468	39,971	11,065	6,917
1977-78	28,380	40,375	17,437	6,127
1978-79	39,479	110,933	22,281	3,435

Source: Government of the Northwest Territories, Department of Social Development

Table 36

Social Assistance, Dollar Value by Month and Cause of Need,
Calendar Year 1979Arctic Bay

Month	Health	Dependent Children	Cause of Need			Total
			Unemployed But Employable	Economic other	Supplementary	
Jan.	2,533	428	494	109	178	3,742
Feb.	2,057	653	286	60	0	3,056
Mar.	1,761	645	0	0	0	2,406
Apr.	1,194	760	394	0	75	2,423
May	1,426	521	1,340	0	270	3,557
June	1,713	783	610	0	0	3,106
July	1,591	110	75	0	0	1,776
Aug.	1,829	220	220	0	319	2,588
Sept.	1,701	119	0	558	137	2,515
Oct.	1,685	0	0	0	0	1,685
Nov.	1,589	55	110	558	0	2,312
Dec.	2,312	0	220	0	529	3,061
Total	21,391	4,294	3,749	1,285	1,508	32,227

Pond Inlet

Month	Health	Dependent Children	Cause of Need			Total
			Unemployed But Employable	Economic other	Supplementary	
Jan.	3,703	604	7,741	91	1,473	13,612
Feb.	3,674	1,054	3,765	0	1,369	9,862
Mar.	3,301	471	2,125	100	3,963	9,960
Apr.	1,859	995	980	251	3,942	8,027
May	2,414	1,122	2,165	75	2,968	8,744
June	3,421	922	2,039	0	2,031	8,413
July	4,392	977	1,557	979	536	8,441
Aug.	3,410	1,654	1,933	57	1,484	8,538
Sept.	2,409	1,654	1,032	0	1,521	6,616
Oct.	3,845	1,431	1,104	32	1,681	8,093
Nov.	2,421	1,595	474	0	2,106	6,596
Dec.	2,143	495	0	0	2,258	4,896
Total	36,992	12,974	24,915	1,585	25,332	101,798

Table 36 (Continued)

Resolute

Month	Cause of Need				
	Health	Dependent Children	Unemployed But Employable	Economic other	Supplementary Total
Jan.	244	822	809	0	0
Feb.	0	2,585	227	0	0
Mar.	376	386	0	220	0
Apr.	351	1,544	800	1,527	0
May	180	826	702	20	0
June	437	961	570	200	0
July	515	465	1,907	0	0
Aug.	194	848	1,082	0	0
Sept.	150	157	483	0	0
Oct.	150	565	1,018	0	0
Nov.	150	308	1,236	0	0
Dec.	375	270	1,268	0	0
Total	3,122	9,737	10,102	1,967	0
					24,928

Grise Fiord

Month	Cause of Need				
	Health	Dependent Children	Unemployed But Employable	Economic other	Supplementary Total
Jan.	109	0	232	0	0
Feb.	218	0	109	0	0
Mar.	0	0	109	0	0
Apr.	236	0	301	25	0
May	120	0	0	424	0
June	120	0	0	0	0
July	120	0	0	0	0
Aug.	120	0	0	0	0
Sept.	320	0	120	0	0
Oct.	120	0	240	0	0
Nov.	120	0	0	0	0
Dec.	0	0	0	0	0
Total	1,603	0	1,111	449	0
					3,163

Source: Government of the Northwest Territories, Department of Social Development

Table 37

Social Assistance, Cases/Units¹ By Cause of Need, Calendar Year 1979

Arctic Bay

Month	Cause of Need					Total
	Health	Dependent Children	Unemployed But Employable	Economic other	Supplementary	
Jan.	8/26	2/4	2/12	1/1	1/1	14/44
Feb.	8/25	4/14	2/11	1/1	0/0	15/51
Mar.	8/16	2/9	0/0	0/0	0/0	10/25
Apr.	5/10	3/9	2/14	0/0	1/6	11/39
May	5/10	2/7	3/15	0/0	1/2	11/34
June	5/10	3/10	3/15	0/0	0/0	11/35
July	6/13	1/2	1/2	0/0	0/0	8/17
Aug.	7/16	1/2	1/2	0/0	1/5	10/25
Sept.	7/22	1/5	0/0	1/7	1/6	10/40
Oct.	5/12	0/0	0/0	0/0	0/0	5/12
Nov.	5/11	1/2	1/2	1/7	0/0	8/22
Dec.	7/22	0/0	1/2	0/0	4/13	12/37

¹Case refers to the applicant for Social Assistance. Unit refers to all those dependent on Social Assistance, i.e. applicant plus dependents. Information is presented case first, followed by units.

Source: Government of the Northwest Territories, Department of Social Development.

Table 38

Cases Who Received Social Assistance at Least Once in 11-month Period
April 1, 1979 - Feb. 29, 1980

	<u>Cases</u>	<u>Total Value</u>	<u>Average</u>
Arctic Bay	33	\$29,711	\$900
Pond Inlet	53	81,745	1,542
Resolute	18	22,653	1,259
Grise Fiord	6	3,126	521

Source: Government of the Northwest Territories, Department of Social
Development

Table 39

Number of Low Rental and Public Housing Units Constructed and Occupied, Per Community, 1975-1980¹

	1975	1976	1977	1978	1979	1980
Arctic Bay	Constructed 10	5	5	0	5	0 ⁵
	Occupied 65	70	75	75	80	80
Pond Inlet	Constructed 8	15	9	10	10	0 ⁵
	Occupied 73	80 ²	97	107	117	117
Resolute	Constructed 0	20 ³	0	0	0	0
	Occupied 34	34	34	34	34	33 ⁴
Grise Fiord	Constructed 0	3	0	0	0	0
	Occupied 17	20	20	20	20	20
Nanisivik	Constructed			15	0	0
	Occupied			15 ⁶	15	15

¹This does not include housing units provided by Government of the Northwest Territories and Federal Government for their staff, and by the Hamlets of Arctic Bay and Pond Inlet for some administrative staff.

²Some houses shipped for construction in 1976 were not ready for occupancy until 1977.

³20 Northern Rental Units written off.

⁴1 unit burned

⁵10 units to be rehabilitated in each of Arctic Bay and Pond Inlet, 1980

⁶These units constructed by the Northwest Territories Housing Corporation are leased by Nanisivik Mines Ltd. for occupancy by apprentices, and managed by the mine.

Source: Northwest Territoires Housing Corporation, Baffin District.

Table 40

Minimum and Maximum Monthly Rents Per Unit Low Rental and Public Housing, 1976-1980

	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
Minimum	\$28	28	28	28	28
Maximum	25% ¹	25% ¹	\$425	270	315

¹25% of gross household income

Source: Northwest Territories Housing Corporation, Baffin District

Table 41

Revenue and Expenditure on Low Rental and Public Housing, 1978¹

	<u>Revenue (Rents Collected)</u>	<u>Expenditures²</u>	<u>Revenue as Percentage of Expenditure</u>
Arctic Bay	\$50,676	\$264,012	19.2
Pond Inlet	88,187	455,534	19.4
Resolute	37,648	193,330	19.5
Grise Fiord	<u>14,621</u>	<u>85,609</u>	<u>17.1</u>
Total	191,132	998,485	19.1

¹Excluding Nanisivik, where housing is administered by Nanisivik Mines Ltd.

²Includes ammortization

Source: Northwest Territories Housing Corporation, Baffin District

Table 42

Some Components of Income, by Community, 12-month Period¹

Income Source and Period		Arctic Bay	Pond Inlet	Resolute	Grise Fiord
A:	Cash Income				
(i)	Wages/Salaries				
	Community Councils ²	196,561	360,175	31,075	50,947
	Government of Northwest Territories ³	365,762	504,075	344,939	197,142
	Nanisivik Mines Ltd. ⁴	191,505	26,901	0	0
	Housing Construction	94,259 ⁵	16,000 ⁶		
	Housing Administration and Maintenance ⁷	58,427		9,151	35,056
	Housing Administration/ Maintenance/Construction		207,796 ⁸		
	Panarctic ⁹	65,748	144,750	0	0
	NCPC ¹⁰	20,000	50,000	0	0
	Hudson's Bay Company ¹⁰	60,000	100,000	40,000	0
	Local Co-operatives ¹⁰	100,000	400,000	60,000	50,000
	Arctic Bay Ladies Sewing Group ¹⁰	47,000			
	Other ¹¹	50,000	200,000	125,000	70,000
	Sub-Total	1,249,262	2,009,697	610,165	403,145
(ii)	Hunting/Trapping/ Fishing ¹²				
	Sale of Products	100,201	97,060	61,738	43,380
(iii)	Carvings ¹³	140,000	13,000	5,000	10,000
(iv)	Transfer Payments ¹⁴	54,110	87,550	20,160	11,320
(v)	Social Assistance Payments ¹⁵	39,479	110,933	22,281	3,435
Estimated Total Cash Income		1,583,052	2,318,240	719,344	471,280

(Continuation of Table 42)

<u>Income Source and Period</u>	<u>Arctic Bay</u>	<u>Pond Inlet</u>	<u>Resolute</u>	<u>Grise Fiord</u>
B: Imputed Value of Country Food Available ¹⁶	<u>361,548</u>	<u>520,895</u>	<u>100,506</u>	<u>206,465</u>
Estimated Total Income Available in Cash and Kind	1,944,600	2,839,135	819,850	677,745
Cash Income, ¹⁷ per Capita	4,199	3,556	4,064	4,961
Imputed Value of Available Country Food, per Capita ^{17, 18}	959	799	568	2,173
Total Income, Available in Cash and Kind, per Capita ¹⁷	5,158	4,355	4,632	7,134

Notes and Sources

¹Reporting years vary by activity and source of information. This table identifies the most recent 12-month period for which data are available. Reporting years are individually noted.

²1978-9 fiscal year. Government of the Northwest Territories, Department of Local Government, Frobisher Bay.

³1978-9 fiscal year. Government of the Northwest Territories, Department of the Executive, Frobisher Bay.

⁴1978 Calendar year. From Table 19.

⁵1979 Calendar year. Max Machmer (Contractor).

⁶1979 Calendar year, estimate by Pond Inlet Housing Association.

⁷1979 Calendar year. Northwest Territories Housing Corporation, Baffin District, Frobisher Bay.

- 8|1979 Calendar year. Pond Inlet Housing Association.
- 9|1979 Calendar year. Arctic Personnel Ltd. Panarctic's contribution decreased in 1979; for 1978 figures are: Arctic Bay - \$173,693, Pond Inlet - 276, 268.
- 10|1979 Calendar year, estimate.
- 11|1979 Calendar year, estimate. Includes RCMP, Health and Welfare Canada, Steltner Development Company (Pond Inlet), employment at "base" (Resolute).
- 12|July 1, 1978 - June 30, 1979. From Table 9.
- 13|1979 Calendar year, estimates by Canadian Arctic Co-operative Federation and Hudson's Bay Company.
- 14|1979 Calendar year, estimate.
- 15|1978-9 fiscal year. From Table 31.
- 16|Based on average annual harvest for 5-year period 1974-5 through 1978-9. From Table 13.
- 17|Based on December 1979 populations.
- 18|From Table 13.

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Conservation Interests

by G. G. McLean

INTRODUCTION

This paper deals with the various national and international organizations involved in conservation in the Eastern Canadian Arctic. The first section concentrates on the 15 ecological sites identified by the International Biological Program (IBP) as areas of importance for scientific study or in need of protection. Parks Canada is also interested in several areas designated as natural areas of Canadian significance (NACS) and natural sites of Canadian significance (NSCS). The Bylot Island Migratory Bird Sanctuary is dealt with in the next section, followed by a section on sites of historical significance. The final three sections return to international organizations concerned with protecting the arctic environment. The first deals with the UNESCO Man and the Biosphere (MAB) program, the second with UNESCO's world heritage natural sites, and the final section with the International Union for Conservation of Nature and Natural Resources.

ECOLOGICAL SITES IDENTIFIED BY THE INTERNATIONAL BIOLOGICAL PROGRAM

The objective of the International Biological Program is to identify and describe representative and unique samples of natural ecosystems as ecologically significant sites for conservation and scientific investigation. These sites are self-maintaining ecosystems, exceptional ecological or geomorphological features, or sites where the interaction between man's activities and an ecosystem can be monitored. Many of the ecologically significant sites designated by the Arctic Tundra Panel include unique plant associations, rare or endangered populations, breeding areas and critical ranges for animals or birds, and other important natural features.

The volunteer panel members included biologists and other scientists from universities, federal and territorial governments, industry, and the public.

One reason for identifying these ecologically significant sites in the

International Biological Program was to secure some measure of protection for them. This concern was expressed in the publication Ecological Sites in Northern Canada (Nettleship and Smith, 1975): "There are areas of biological, geological and historical importance in the North that urgently require special protection. Because of the vastness of the Canadian North, this may not always be readily apparent. However, here, as elsewhere, man's expanding activities increasingly threaten a number of unique areas and species."

The benefits from establishing sites of ecological significance would include security of wildlife populations, the scientific knowledge gained from research in these sites, and the knowledge that the ecosystems represented remain viable for the future.

Current Situation

Within the Lancaster Sound Regional Study area there are 11 complete IBP sites and parts of 4 others. Six of these sites face directly onto Lancaster Sound. A brief description of each of these 15 sites and why they are considered significant is given below. Site numbers have been assigned by the IBP committee.

Site number 1-3, Stanwell-Fletcher Lake, Somerset Island, is an area of approximately 3 000 km² (1 160 square miles) of arctic upland, including very rugged terrain with elevations of over 390 m. Many of the deeply incised stream valleys in this area trend northwest to southeast, and a varied floral composition occupies diverse rock types. There are at least 28 bird species in the area, as well as small populations of Muskoxen and Peary Caribou. Inuit use the lake for char fishing and there is considerable archaeological interest in this area.

Site number 1-5, Prince Leopold Island and adjacent Cape Clarence, is an area of approximately 5 700 km² (2 195 square miles) in an arctic marine ecosystem. The island is flat-topped and surrounded by vertical limestone cliffs, 250-360 m high. A prominent gravel spit extends from the southeast corner of the island, and extensive talus slopes occur on the south and west sides. The island provides an important breeding habitat for many species of seabirds, including Northern Fulmars on the northern cliffs (30 000), Thick-billed Murres on the eastern and northern cliffs (85 000),

Black-legged Kittiwakes also on the eastern and northern cliffs (30 000), Black Guillemots in the talus and rock crevices on the cliffs (3 000), and Glaucous Gulls above the Murre and Kittiwake colonies ($\sim$ 2 000). At Cape Clarence, more than 200 pairs of Black Guillemots nest along the entire cliff face.

This area is also important for marine mammals, especially White Whales, Narwhals, Ringed Seals, and Polar Bears. Several archaeological sites have been discovered in the Port Leopold area making it important for future archaeological research.

Site number 1-6, Bellot Strait, Boothia Peninsula, extends slightly into our study area and is a 520 km^2 (200 square miles) area including a steep-sided channel surrounded by very rugged terrain. Bellot Strait freezes over each winter, although some open water remains at the eastern entrance to the channel. This is an important area for marine mammals, including Beluga Whales and Narwhals, and a feeding area for seabirds. A small Glaucous Gull colony exists in the northwest part of this area. The remains of Fort Ross, a Hudson's Bay Company post built

in 1937, and the presence of several Inuit stone houses are of considerable historical interest.

Site number 1-8, Cunningham Inlet, Somerset Island, is a small area of 155 km^2 (60 square miles) including a deep, steep-sided valley and inlet. The area is bounded on the south by the delta of the Cunningham River, and on the east and west by cliffs rising to over 180 m. The area is used as a calving ground by Beluga Whales in summer, and Polar Bears feed on the numerous Ringed Seals at the mouth of the inlet. Polar Bear denning also occurs in this area.

Site number 1-10, Washington Point, Baillie Hamilton Island, is a small area of 290 km^2 (112 square miles) located to the north of Cornwallis Island. The island is flat-topped with steep-sided coasts and provides a nesting habitat for Black-legged Kittiwakes (approximately 3 000 pairs). This site is one of the most northerly breeding sites in the entire Eastern Arctic. Smaller numbers of Glaucous Gulls and Black Guillemots also nest on the island's cliffs.

Site number 2-5, Cape Sparbo, Devon Island, is an area of 870 km² (335 square miles) located on the northern coastal lowlands of Devon Island. The exceptionally luxuriant vegetation on this lowland supports a rich fauna including Arctic Fox, weasel, Arctic Wolf, Polar Bear, Muskoxen, and caribou. Several geological, glaciological, and archaeological studies have been conducted at this site and it offers good opportunities for research.

Site 2-11, Cape Vera, Devon Island and St. Helena Island, approximately 3 500 km² (1 350 square miles), extends into the study area from the north and is a prominent cliff coastline facing east towards Jones Sound. Cape Vera provides a breeding habitat for a large Northern Fulmar colony and St. Helena Island has large populations of nesting birds including Common Eiders, Glaucous Gulls, and Black Guillemots. The site includes an extremely important feeding and sanctuary area for Polar Bears and also important archaeological areas.

Site number 2-12, Cobourg Island, is a large

site of 4 025 km² (1 555 square miles) extending into the study area at the northeast corner. This site includes an area of very rugged terrain with icecaps pierced by peaks rising to 825 m. The west and north sides of Coburg Island have been heavily glaciated. There is open water year round to the east of the island, which is an important feeding area for seabirds and marine mammals. About 200 000 pairs of Thick-billed Murres and 1 000 pairs of Black-legged Kittiwakes breed on the cliffs at Cambridge Point. Smaller numbers of these birds also nest off the east coast of Marina Peninsula, and bays at the south end of the island are used regularly by Eiders and Oldsquaws during the moulting period. Whales, Narwhals, Walrus, and Polar Bears are also commonly found in this area. An important archaeological site is located north of Cape Spencer.

Site number 2-14, Lancaster Sound Marine Area, is a 6 100 km² (2 360 square miles) area at the southeast end of Devon Island. The waters in this area are very productive and contain probably the highest plankton densities

in the Canadian High Arctic, making it critical for the survival and production of many seabirds. This area is also an important feeding area for marine mammals, especially Walrus, seals, Narwhals, and Beluga Whales which migrate through the area each year. Polar Bears also occur throughout this site and there is a small herd of Muskoxen in the Croker Bay-Dundas Harbour area.

Site number 2-15, Cape Liddon, Devon Island, is an area of $3\,760\text{ km}^2$ (1 450 square miles) characterized by steep cliffs rising to over 300 m. North of Cape Liddon lies Caswell Tower, a high rock stack overlooking Radstock Bay. Significant numbers of Black Guillemots and Common Eiders nest around Caswell Tower, and a major Northern Fulmar colony uses the cliff ledges as breeding areas. Marine mammals are abundant and Polar Bears den in parts of this area. Many archaeological sites have been discovered in the area south of Caswell Tower.

Site number 2-16, Hobhouse Inlet, is an area of $4\,240\text{ km}^2$ (1 640 square miles) located on the south coast of Devon Island. The area

includes steep, grassy, rock cliff ledges extending along the coast, and provides a breeding habitat for a major Northern Fulmar colony. Other birds nesting in this area include Black Guillemots, Glaucous Gulls, and Thayer's Gulls.

Site number 2-17, Skruis Point, is an area of $2\,380\text{ km}^2$ (920 square miles) located on the north coast of Devon Island. Steep rock cliffs along the peninsula range in height from 75 to 23 m providing a breeding habitat for a colony of approximately 10 000 Black Guillemots. It is estimated that this is the largest Black Guillemot colony in the Canadian Arctic.

Site number 7-5, Bylot Island, is a large area of $17\,920\text{ km}^2$ (6 920 square miles) encompassing most of Bylot Island. Steep cliffs border much of the coast and provide nesting areas for Thick-billed Murres and Black-legged Kittiwakes. Principal nesting areas are on the cliffs west of Cape Hay and at Cape Graham Moore. The low-lying region in the southwest corner of the island supports a dense cover of vegetation and provides a

habitat for a number of shorebirds and land birds, including a major part of the world population of Greater Snow Geese and large numbers of Red-throated Loons, Oldsquaw, and King Eider Ducks. The area around Bylot Island is also an important area for marine mammals including Ringed Seals, Bearded Seals, Hooded Seals, and Narwhals. Polar Bears den along the north and east coasts of the island. Many important archaeological sites have been discovered along the coasts of Bylot Island. Part of this site is protected under the federal Bylot Island Migratory Bird Sanctuary regulations.

Site number 7-7, Baillarge Bay, is an area of 1 555 km² (600 square miles) on the north-west coast of Borden Peninsula. The steep cliffs between Baillarge Bay and Elwin Inlet provide a breeding habitat for a major colony of Northern Fulmar (approximately 25 000 pairs). This general area is also critical for the survival and reproduction of many other marine birds including Glaucous Gulls, Thayer's Gulls, Black-legged Kittiwakes, Thick-billed Murres, Black Guillemots, Snow

Geese, Oldsquaw, and Eider Ducks. The offshore areas are highly productive and provide a breeding and feeding habitat for marine mammals, including Beluga Whales, Narwhals, Ringed Seals, Walrus, and Polar Bears.

Site number 7-11, Buchan Gulf, is an area of 2 180 km² (840 square miles) extending into the study area in the southeast corner. High cliffs, many fiords, glaciers, and icecaps characterize this site. A major Northern Fulmar colony is located on the north coast of Buchan Gulf and Glaucous Gulls also nest among the Fulmars.

Completeness and Quality of Data

This subject area is complete and there were no problems of scale in mapping it. The descriptions of the sites are accurate, but the approximate numbers of birds inhabiting these sites may be subject to revision pending further investigations. The information on numbers of birds is considered adequate for the purposes of the Lancaster Sound Regional Study.

Need for Additional Study

No additional study is required for this part of the project. However, it should be noted that action is required if the ecologically significant sites that have been identified are to receive some form of legislative protection. The panel members associated with the IBP can only recommend the establishment and protection of these sites, few of which have any legal protection. The final decision rests with the Minister of Indian Affairs and Northern Development, based on recommendations from the Interdepartmental Working Group on IBP Ecological Sites.

Relationship with Other Subject Areas

These ecologically significant sites encompass biologically important areas. In order to protect life systems supported in them, some of these sites must cover a large surface area. Other sites, such as a nesting area, can be smaller and still offer the required protection.

The traditional native activities of hunting and trapping are considered acceptable in most sites, but some conflict exists with the extractive industries. Where multiple use

is unavoidable, there are suggestions for modified practices that would be least harmful to the existing biota and landforms. For example, reduced exploration activity and constraints on exploration techniques have been suggested. Increasing industrial activity makes urgent the decision to give protective status to ecologically significant sites in the North. Canada has a unique responsibility, especially in the Arctic, for identifying and protecting ecosystems found nowhere else in the world.

PARKS CANADA'S INTEREST IN LANCASTER SOUND

Introduction

In brief, the purpose of this report is four-fold. The first part outlines the policies that guide the development of the national parks and Canadian landmark systems. The second part examines the various natural regions in the Lancaster Sound study area, their representation in the system of national parks, and Parks Canada interests. Part three provides a brief description of each terrestrial and marine natural area of Canadian significance (NACS) identified to date in Lancaster Sound. The concluding

section outlines the need for additional study.

Parks Canada Policy

The National Parks System

National parks are intended to protect representative examples of the diversity of Canada's terrestrial and marine areas for the benefit, education, and enjoyment of present and future generations. To this end, Parks Canada has divided Canada into 48 natural regions, of which 39 are terrestrial and 9 are marine (see Maps 1 and 2). Each of these natural regions should be represented in the system of national parks. In order to achieve this goal, certain natural areas are identified within each natural region. These areas include a definable ecological unit that contains the greatest diversity of natural themes and are therefore representative of the natural region. The areas are referred to as representative "natural areas of Canadian significance" (NACS). Potential national parks are selected from among the representative natural areas of Canadian significance according to the provisions

stated in the Parks Canada Policy (see Appendix A).

NACS identified by Parks Canada must satisfy the following criteria:

- (i) the area must portray the diverse geological, physiographical, oceanographical, and biological themes of a natural region; and
- (ii) the area must have experienced minimum modification by man or, if significant modification has occurred, must have potential for restoration to a natural state.

Representative natural areas of Canadian significance are identified regardless of their current protective status or jurisdiction, in consultation with provincial and territorial governments, other federal agencies, and with the interested public.

Canadian Landmark System

In addition to natural areas of Canadian significance, Parks Canada has initiated a program to identify exceptional natural sites of Canadian significance (NSCS).

These natural sites must satisfy the following criteria:

- (i) the site must contain a natural feature or phenomenon that is unique or rare in Canada or the world, or the site must be an outstanding example of a particular natural theme in Canada; and
- (ii) the site must have experienced minimum modification by man or, if such modification has occurred, the main feature must be unaffected and the site must have potential for restoration to a natural state.

NSCS are identified in consultation with the provinces and territories for possible inclusion in the system of Canadian landmarks. Identification is on the basis of natural themes that are refinements of the following broad environmental categories: geology, landforms, vegetation, wildlife, climate, rivers and lakes, oceans and marine life.

There are a variety of ways in which such exceptional natural sites can be protected. Parks Canada is proposing a

flexible system of Canadian landmarks that could include sites owned and protected not only by Parks Canada but also by provincial governments, territorial governments, or by others. The system of Canadian landmarks should strive to include all exceptional natural sites of Canadian significance. The means by which Canadian landmarks can be established and protected will be discussed and agreement sought with the provinces and territories.

Natural Regions in Lancaster Sound

Lancaster Sound and adjacent coastal reaches include portions of three terrestrial regions: the Eastern High Arctic Glacier Region (region 39), the Eastern Arctic Lowlands (region 37), and the Northern Davis Region (region 26). The area also encompasses a portion of the northwestern extent of the Eastern Arctic Marine Region. Parks Canada's objective is to represent each of the marine and terrestrial natural regions in the system of national parks.

Representation of these Natural Regions in the National Parks System

Terrestrial

Auyuittuq National Park Reserve on southern Baffin Island provides representation of natural region 26. Representation of natural region 39 is being sought through the designation of the Ellesmere Island NACS as a national park. Natural region 37 is not yet represented in the system of national parks. In 1978-79 the National Parks Branch conducted a regional analysis of this region (37). Three of the four NACS identified in this study are located in the Lancaster Sound region (see Map 3). Two NACS identified in the region, namely Bylot Island-Eclipse Sound and Creswell Bay, have been extended into adjacent natural regions in order to incorporate definable ecological units.

The National Parks Branch completed a detailed natural theme study of these three terrestrial natural areas of Canadian significance in the Lancaster Sound region during 1979-80. This study analysed their natural theme representation in greater

detail and ranked them in importance based on the extent that each represented the natural themes that are characteristic of the East Arctic Lowlands. The Bylot Island-Eclipse Sound area is considered the most representative, followed by Creswell Bay and the Western Borden Peninsula area. Parks Canada is interested in incorporating one of these NACS in the system of national parks and has a preference in relation to this ranking.

The regional analysis of the Eastern Arctic Lowland conducted by the National Parks Branch in 1978-79 also identified Prince Leopold Island-Cape Clarence and the Great Plain of Koukdjuak as exceptional natural sites of Canadian significance. Parks Canada is interested in including the former site in the system of Canadian landmarks by its designation as a national landmark.

Marine

Parks Canada is also interested in including a marine area in the national parks system that is representative of the

Eastern Arctic Marine Region. The small marine component in Auyuittuq National Park Reserve does not adequately represent this marine region based on an assessment of the existing documentation. As a result, additional representation is required.

A biological and oceanographic theme study of the Eastern Arctic Marine Region conducted by the Marine Science Center of McGill University in 1978 identified four areas of interest in the region. These are: Frobisher Bay, (southwest shore); Cumberland Sound to Home Bay; Bylot Island (Eclipse Sound) - Lancaster Sound; and Mackinson Inlet (see Map 4).

Further study of the Lancaster Sound-Eclipse Sound area of interest to Parks Canada in 1979-80 has confirmed that this marine area is representative of the geological, oceanographical, and biological themes of the Eastern Arctic Marine Region. The area has, therefore, been designated as a NACS.

In addition to those areas identified in the McGill study, two other marine areas were identified by Parks Canada in western Lancaster Sound and adjacent inlets. They

too appear at this time to portray the diverse marine themes that are characteristic of this marine region. These two areas of interest, the Radstock- Maxwell Bay and Creswell Bay areas are also shown on Map 4. Parks Canada is, at the present time, assessing whether or not they, and the previously noted areas of interest, fully satisfy NACS criteria.

Natural Areas of Canadian Significance in the Eastern Arctic Lowlands Terrestrial Region (37)

Bylot Island-Eclipse Sound Terrestrial NACS
This area ranks first in terms of natural theme representation. It is approximately 200 km long and 100 km wide and includes all of Bylot Island, a narrow strip along eastern Borden Peninsula and an area surrounding the fiord system south of Eclipse Sound. The central part of Bylot Island is mountainous, with icefields and valley glaciers. The southwestern corner of the island is low and well vegetated, providing an ideal nesting habitat for one of the largest Greater Snow Goose colonies in the world. Steep cliffs along the coast

of Bylot Island in the north and east provide nesting areas for Thick-billed Murres and Black-legged Kittiwakes. Many archaeological sites have been discovered along the coasts of Bylot Island and Borden Peninsula, and the fiord landscape south of Eclipse Sound provides a scenic attraction that is unrivalled in the region. In all, the diversity of terrain types, fauna, and flora make this an outstanding natural area of Canadian significance.

Creswell Bay

This area ranks second in terms of natural theme representation. It is approximately 80 km by 120 km and contains a variety of geological, physiographical, and landform themes characteristic of the natural region. The terrain is varied with elevations of almost 400 m, and the diverse rock and soil types support a variety of flora. At least 35 species of birds are found in this area as well as small populations of Muskoxen and Peary Caribou. Large groups of migratory Greater Snow Geese and Northern Fulmars use the bay as a major staging area. There is also

considerable archaeological interest in this area.

Western Borden Peninsula

This area ranks third in terms of natural theme representation. It is approximately 200 km long and 90 km wide and extends from Moffet Inlet in the south to Cape Charles Yorke in the north. It forms part of the Lancaster Plateau physiographic region with elevations reaching 900 m above sea level. The valley sides are commonly steep and vertical cliffs over 400 m high occur in the northern part of the area. The rivers and streams are well-developed with several resistant dykes creating spectacular waterfalls. Glacial landforms and periglacial features add variety to the landscape. A major Northern Fulmar colony (approximately 25 000 breeding pairs) inhabits the coastal cliffs between Baillarge Bay and Elwin Inlet. The northern coast of this area is also an important nesting and feeding habitat for other marine birds including Glaucous Gulls, Thayer's Gulls, Black-legged Kittiwakes, Thick-billed Murres, and Black

Guillemots.

Natural Areas of Canadian Significance in
the Eastern Arctic Marine Region

Lancaster Sound-Eclipse Sound

This area is located at the east entrance of Lancaster Sound and includes the marine environment along the southeast coast of Devon Island from Croker Bay to Philpots Island, the offshore area surrounding Bylot Island including Navy Board Inlet, Eclipse Sound, and the fiord system south of Eclipse Sound.

A large percentage of the Eastern Arctic marine mammal and seabird populations either migrate into this area as a final destination or use it as a staging area for migrations farther north or westward into Lancaster Sound and the Central Arctic.

Studies have indicated that 26 species of seabirds and shorebirds and 11 different species of mammals migrate to or through this area. Of the 11 species of Canadian sea mammals found in the Eastern Arctic marine region, 10 can be found in this

natural area of Canadian significance.

The pelagic or open-water area between Bylot and Devon Islands is a definable ecological unit known to encompass numerous oceanographic themes such as areas of high planktonic productivity, gyros, upwellings, temperature gradients, ice flows, icebergs, and a polynya.

The coastal area of Lancaster Sound from Croker Bay to Philpots Island is an exposed coastal zone. It provides breeding, staging, and critical feeding habitats for large concentrations of the major Eastern Arctic seabird and mammal species such as Black-legged Kittiwake, Thick-billed Murres, Northern Fulmar, gulls, Polar Bears, Beluga Whales, Walrus, and Ringed Seals. This coastline displays diverse erosional, depositional, deltaic, tectonic, and glacial landforms. Similar features are also found on the north coast of Bylot Island.

In contrast, the inner coast area of Bylot Island, which includes Navy Board Inlet and Eclipse Sound, is a more sheltered coastal unit. It provides

breeding, staging, and feeding habitats for Narwhals, Beluga Whales, Bowhead Whales, Harp Seals, the Greater Snow Goose, Old Squaw, Sabine's Gull, and Black-legged Kittiwake. This NACS also exhibits representative samples of coastal landform themes and marine habitats influenced by fresh water from glacier melt.

The several prehistoric sites found along Navy Board Inlet and Eclipse Sound are important cultural themes that reflect the Inuit's use of these arctic marine resources.

Radstock Bay-Maxwell Bay Area of Interest
This marine area is approximately 30 km by 110 km and is located off the southern coast of Devon Island at the western end of Lancaster Sound. The coastal zone is characterized by steep cliffs rising to over 300 m. Significant numbers of Black Guillemots and Common Eiders nest in the area, and a major Northern Fulmar colony is located on the cliff ledges at Cape Liddon. Marine mammals are abundant, particularly

Polar Bears which are known to den in parts of this area. Many archaeological sites are known in the area around Radstock Bay and Beechey Island. The data with which to evaluate the oceanic phenomena of this area are not yet available and so the seaward limits cannot be defined. Its evaluation as a NACS is presently incomplete.

Creswell Bay Area of Interest

This marine area is located on the eastern side of Somerset Island. Its connection to Lancaster Sound is via Prince Regent Inlet. There appear to be oceanic processes here that provide food and habitat for a considerable number of species of seabirds and marine mammals. Beluga Whales use this bay as well as large flocks of Greater Snow Geese and Northern Fulmars. Like the Radstock Bay-Maxwell Bay area there are insufficient data at this time to evaluate whether or not this area fully satisfies the criteria for a natural area of Canadian significance.

Natural Site of Canadian Significance in
Lancaster Sound

Prince Leopold Island-Cape Clarence

This natural site of Canadian significance is located off the northeast corner of Somerset Island. Prince Leopold Island is perhaps unrivalled in Canada and North America, for nowhere else is a seabird colony found that includes such a variety of species in such large numbers. The principal species inhabiting the island include: Northern Fulmars, Thick-billed Murres, Black-legged Kittiwakes, Glaucous Gulls, and Black Guillemots. In Barrow Strait near Prince Leopold Island, the marine waters are extremely attractive to seabirds and marine mammals, due to rich food supplies caused by upwelling, nutrient mixing, and other oceanographic processes. Sites such as this, which provide ideal breeding habitat and exceptional food supplies are rare in the Canadian Arctic. Several archaeological sites occur on Prince Leopold Island and, in addition, an historical site is located on Seal Bay at Cape Clarence. The unique association of

breeding seabirds, rich marine waters, and the variety and abundance of marine mammals including Beluga Whales, Narwhals, and Polar Bears substantiates this site as a natural site of Canadian significance (NSCS).

Need for Additional Study

As noted previously the Radstock Bay-Maxwell Bay and Creswell Bay marine areas of interest require further study to verify whether or not they satisfy NACS criteria and to establish appropriate offshore boundaries for each.

New park feasibility and desirability studies will be required for the NACS selected to represent the Eastern Arctic Lowlands (natural region 37) and for the NACS selected to represent the Eastern Arctic Marine Region in the national parks system. Such studies will assess whether the potential national parks are of a size and configuration to include definable ecological units whose long-term protection is feasible; offer opportunities for public understanding and enjoyment; and will

result in minimum long-term disruption of the social and economic life of the surrounding region. Parks Canada will also consult with local communities and the interested public regarding the establishment of any new national park in Lancaster Sound area.

Parks Canada cannot protect all the areas identified as representative natural areas of Canadian significance (NACS) in Lancaster Sound. By working with the territories to establish and make public a register listing identified areas, Parks Canada hopes to encourage other public agencies and appropriate private organizations to work towards their protection.

BYLOT ISLAND MIGRATORY BIRD SANCTUARY

Current Situation

The Bylot Island Migratory Bird Sanctuary was established by the federal government in the 1960s to protect the unique Greater Snow Goose population on the island's southwest lowlands, and also the Cape Hay seabird colony.

This sanctuary includes the whole of Bylot Island and all waters and islands or parts of islands within 3 km of the ordinary

seaward high-water mark of Bylot Island. The low-lying region on the southwest corner of the island supports a dense cover of vegetation and provides a habitat for a major part of the world population of Greater Snow Geese. Steep cliffs border much of the remaining coast and provide nesting areas for Thick-billed Murres and Black-legged Kittiwakes. Principal nesting areas are on the cliffs west of Cape Hay and at Cape Graham Moore. Polar Bears den along the north and east coasts of the island. The purpose of this sanctuary is primarily to protect the population of Greater Snow Geese.

Completeness and Quality of Data

This subject area is complete and no problems of scale were encountered in mapping it. This information is considered adequate for the purposes of the Lancaster Sound Regional Study.

Need for Additional Study

No additional study is required for this part of the project. However, recently passed legislation (Canada Wildlife Act, July 1973) provides a potential means of securing

ownership and control of northern wildlife areas and sanctuaries. This act permits the Department of the Environment to extend protection and management to birds, animals, plants, and possibly whole ecosystems by setting areas aside for wildlife research, conservation, and interpretation. This would provide a greater measure of control over activities in, or adjacent to, the Bylot Island Bird Sanctuary. In addition, the Canadian Wildlife Service is currently studying the Lancaster Sound region and will identify key areas of importance for future management and protection. At this time, no areas have been proposed in the Lancaster Sound region.

Relationship with Other Subject Areas

The Migratory Bird Sanctuary Regulations passed in 1974 indicate several restrictions and conditions applying to the sanctuaries:

1. No person shall hunt migratory birds or disturb their nests.
2. No person shall have any firearm in his possession in a migratory bird sanctuary, unless authorized by permit as provided

in article (4) below.

3. No person shall carry on any activity that is harmful to migratory birds or the eggs, nests, or habitat of migratory birds, except under authority of a permit.
4. Any person who is the holder of, or eligible for, a general hunting licence for the Northwest Territories may carry a firearm within any migratory bird sanctuary lying north of the 60th parallel of north latitude for the purpose of taking fur-bearing animals, big game, or sea mammals in accordance with that licence.

SITE OF HISTORICAL SIGNIFICANCE

Current Situation

The Commissioner of the Northwest Territories may mark or otherwise commemorate places and sites of prehistoric or historic significance to the Territories. The complete geographical feature known as Beechey Island, situated off the southwest coast of Devon Island, has been designated as a site of historical significance, in accordance with the Historical

Resources Ordinance.

Completeness and Quality of Data

This is the only historical site in the Lancaster Sound study area that has been officially designated in the territorial ordinance. The data are complete and accurate for the purposes of our study.

Need for Additional Study

Other sites or areas of historical importance should be considered in the same manner. The Historical Resources Ordinance specifies that "whenever in the opinion of the Commissioner, any prehistoric or historic remains, whether or not designated as an historic place under this Ordinance..." are thought of some importance they should be considered of historical significance.

The conditions affecting the Beechey Island site can be considered for all historical sites in our study area.

Relationship with Other Subject Areas

Whenever a historic site is threatened with destruction through mineral exploration or

commercial, industrial, mining, or other activities, the Commissioner may order the people undertaking the activity to provide for adequate investigation, recording, and salvage of prehistoric or historic objects threatened with destruction. Any person failing to comply with this order is guilty of an offence and punishable on summary conviction.

WORLD BIOSPHERE RESERVE

Introduction

In 1978 UNESCO initiated the Man and the Biosphere (MAB) program, and one of its most important objectives is to develop a world-wide system of biosphere reserves. A biosphere reserve is a protected representative area of the world in which the diversity and integrity of plant and animal systems within natural ecosystems can be preserved for present and future use and study. This would include at least one conservation area in each of the world's natural regions identified by the International Union for Conservation of Nature and Natural Resources (IUCN).

Biosphere reserves have three main purposes:

- (i) maintaining genetic diversity;
- (ii) providing areas for ecological and environmental research and monitoring;
- (iii) providing education and training.

A detailed procedure for the submission of candidate areas for designation as a biosphere reserve was developed and published as Canada/MAB Report No. 10.

Current Situation

Canadian biosphere reserves will be areas of land and coastal or near-shore environments that require long-term management and planning for their protection and conservation. They will be integrated in a worldwide network of biosphere reserves.

Canada currently has two biosphere reserves, Mont St. Hilaire in Quebec, and Waterton Lakes National Park in Alberta. Work on identifying further MAB reserves is continuing in Canada. In many countries, national parks provide a foundation for the reserve system.

The Lancaster Sound area has been informally considered by the MAB Committee as a possible candidate for a biosphere reserve.

Completeness and Quality of Data

This candidate area has not been formally proposed and hence the detailed guidelines and identification of the precise boundaries have not been completed. However, for the purpose of the Lancaster Sound study, it is sufficient to mention that this area is being considered as a biosphere reserve.

Need for Additional Study

No additional study is required as part of this project. However, monitoring the proposed candidate area and its possible submission to the UNESCO secretariat may emphasize the international importance of this area.

Relationship with Other Subject Areas

The criteria for inclusion of biosphere reserves in the biosphere program are very similar to those used for world heritage natural sites. However, because it is a recommended UNESCO program, MAB does not have the binding and legal force of a UNESCO convention or treaty. It is expected that the

ecological sites identified in the International Biological Program will form core areas for the biosphere reserves. Various types of legislation or government regulations could be used as the legal basis for setting up reserves, such as the Territorial Lands Act, Canada Wildlife Act, NWT Parks Ordinance, or the NWT Game Ordinance.

WORLD HERITAGE NATURAL SITE

Introduction

Recognizing that the world's natural and cultural heritage transcends national boundaries and must be preserved for future generations, the member states of UNESCO have drawn up the World Heritage Convention, which is concerned with the protection and management of this heritage.

The objectives of the convention complement rather than compete with national heritage conservation programs and provide for:

- (i) establishing a World Heritage Committee;
- (ii) compiling a World Heritage List, comprising those cultural and natural properties throughout the world that are

considered of outstanding universal value;

- (iii) preparing a World Heritage in Danger List;
- (iv) establishing a World Heritage Fund to provide aid to member states;
- (v) providing technical assistance to member states.

Current Situation

World natural heritage sites are defined by the World Heritage Committee and include:

- (i) outstanding examples of the major stages in earth's evolutionary history;
- (ii) outstanding examples of significant on-going geological processes, biological evolution, and man's interaction with his natural environment;
- (iii) unique, rare, or superlative natural phenomena, formations, or features, or areas of exceptional natural beauty;
- (iv) habitats where populations of rare or endangered species of plants and animals still survive.

In September 1978 the first four natural areas were approved for the World Heritage

List. Of these four areas, one was in Canada (Nahanni National Park Reserve).

The World Heritage Convention is not intended to provide for the protection of all properties of great interest everywhere, but only for a select list of the most outstanding from an international viewpoint.

The benefits of having sites on the World Heritage List include international prestige and added moral protection. The prospect of a site being nominated may speed up the protection of the site and the enactment of the necessary legislation for its management.

Canada is likely to get a number of properties on the list. In the Lancaster Sound area, Prince Leopold Island is considered a potential candidate area for nomination to the World Heritage List. The area would include all Prince Leopold Island, Cape Clarence on Somerset Island, and adjacent marine waters.

Completeness and Quality of Data

This candidate area has not been formally proposed and hence the detailed guidelines and identification of the precise boundaries have

not been completed. It is expected that this world heritage natural site will focus on the natural site of canadian significance proposed by Parks Canada.

Need for Additional Study

No additional study is required for this part of the project. However, monitoring the proposed candidate area and its possible submission to the World Heritage Committee may emphasize the international importance of the area.

Relationship with other Subject Areas

There are no restrictions either in the convention or in the guidelines on hunting or trapping by indigenous peoples within the boundaries of a site, or on the extraction of sub-surface resources lying beneath the site from a point outside the boundaries of the site.

All the natural areas nominated by Canada will already be administered under appropriate legislation, so no special additional obligations will be incurred for such areas, other than the requirement to submit an annual report.

report on their maintenance to UNESCO.

INTERNATIONAL UNION FOR CONSERVATION OF NATURE AND NATURAL RESOURCES

Introduction

Since its establishment in 1948, the International Union for Conservation of Nature and Natural Resources (IUCN) has had the broad purpose of fostering the maintenance of the biosphere and its diversity by rational management of the earth's resources. It is deeply concerned over the effects on the environment of man's continued over-exploitation of resources and abuse of life-supporting systems in the world. IUCN seeks to preserve the environmental integrity of the world and promote the protection and management of significant areas and wildlife habitats.

The main functions of the IUCN include:

- (i) identifying and analysing conservation issues;
- (ii) acting as a catalyst for appropriate action;
- (iii) providing scientific advice needed by other conservation organizations and member governments.

The projects sponsored by the IUCN can be grouped under the following main headings: environmental policy and planning; environmental law; education; ecological studies and surveys; establishment and management of areas as national parks and reserves; emergency programs for safeguarding animal and plant species threatened with extinction; and supporting other international conservation bodies.

One major focus that IUCN has had is the establishment of a global network of national parks and other protected areas. It is hoped that this global network will facilitate the management of protected areas and the realization of conservation goals. The IUCN has the mandate to provide the United Nations with current data on the status of protected areas on a global basis.

Current Situation

IUCN urges its members to expand the network of protected areas in the north polar and sub-polar regions. If national parks or other reserves are established in the area, IUCN would then become more directly involved and would provide advice or assistance in implementing programs.

Completeness and Quality of Data

This subject area is complete and no mapping is required. The purpose in presenting it is to emphasize the international interest and concern in the polar and sub-polar regions. The information is considered adequate for the Lancaster Sound Regional Study.

Need for Additional Study

No additional study is required for this part of the project.

Relationship with Other Subject Areas

The IUCN is directly related to Parks Canada's interests in the area, the candidate biosphere reserve, and the potential world heritage natural site.

APPENDIX A

Parks Canada Policy, Ottawa, 1979

National Parks, Sections 2 and 3

2.0 National Parks Zoning System

Zoning is one of the most important tools for the planning, development and management of national parks. The national parks zoning system is a resource-based approach by which land and water areas of a national park are classified according to their need for protection and their capability to accommodate visitors. It provides a guide for the activities of both visitors and managers within a national park. It assists in managing the tension between use and preservation.

The zoning system provides a means to ensure that the majority of national park lands and their living resources are protected in a wilderness state with a minimum of man-made facilities. Zoning permitting a concentration of visitor activities and supporting facilities and services will occupy no more than a small proportion of lands in a national park. Moreover, in certain national

parks in remote areas no provision will be made for such zones. In national parks where traditional uses are permitted, the park zoning plan will accommodate such activities.

2.1

The zoning system will reflect Parks Canada's policies and will facilitate their application in individual national parks.

2.2

The national park zoning system will apply to all land and water areas of national parks, and to other natural areas within the Parks Canada system as appropriate.

2.3

A zoning plan will be an integral part of each national park management plan.

2.4

The national park zoning system will consist of the following five zones.

2.4.1 Zone I - Special Preservation

Specific areas or features which deserve

special preservation because they contain or support unique, rare or endangered features or the best examples of natural features. Access and use will be strictly controlled or may be prohibited altogether. No motorized access or man-made facilities will be permitted.

2.4.2 Zone II - Wilderness

Extensive areas which are good representations of each of the natural history themes of the park and which will be maintained in a wilderness state. Only certain activities requiring limited primitive visitor facilities appropriate to a wilderness experience will be allowed. Limits will be placed on numbers of users. No motorized access will be permitted. Management actions will ensure that visitors are dispersed.

2.4.3 Zone III - Natural Environment

Areas that are maintained as natural environments and which can sustain, with a minimum of impairment, a selected range of low-density outdoor activities with a minimum of related facilities. Non-motorized access will be preferred. Controlled access by

private vehicles will only be permitted where it has traditionally been allowed in the past.

2.4.4 Zone IV - Outdoor Recreation

Limited areas that can accommodate a broad range of education, outdoor recreation opportunities and related facilities in ways that respect the natural landscape and that are safe and convenient. Motorized access will be permitted and may be separated from non-motorized access.

2.4.5 Zone V - Park Services

Towns and visitor centres in certain existing national parks which contain a concentration of visitor services and support facilities as well as park administration functions. Motorized access will be permitted.

3.0 Protecting National Park Resources

Land management within national parks differs markedly from that of most other lands, where effort is directed toward modifying or controlling nature, producing crops or extracting natural resources. Within national parks, effort is directed towards protecting our natural heritage by maintaining the physical environment in as

physical environment in as natural a state as possible. This fact has far-reaching implications for the resource management of national parks in that many concepts or ideas which are relevant or essential to the successful management of other lands have limited relevance to the management of national parks. Therefore, caution should be exercised before any active manipulation of park resources is undertaken with preference given to allowing natural processes to function unless they have been clearly altered or made inoperative by man-induced changes.

The management of national parks should not, however, be in isolation from the regions in which they are located. Few, if any, land uses, either within or outside national parks, can occur without there being both beneficial and detrimental effects on the surrounding lands. Co-operation with other land management agencies is therefore essential.

National parks are special areas which are protected by federal legislation from all forms of extractive resource use such as mining, forestry, agriculture, oil, gas and hydro electric development and sport hunting. In some new national parks, however, certain

traditional resource uses by local residents may be allowed to continue. Such activities must not destroy or seriously impair the natural values for which the park was established. They will be clearly agreed to in each case at the time of formal establishment of the national park. It is also essential that in establishing new national parks, Parks Canada honour the treaties of Indian people which in some cases may involve hunting, fishing and trapping rights in national parks.

The natural and cultural resources of a national park must be protected from the effect of a man's activities so that they can be left unimpaired for future generations. Actions by Parks Canada to provide for public understanding and enjoyment of national parks must be carefully considered to minimize their environmental impact. The process of environmental assessment and review is intended to ensure that the full-range of possible adverse effects of any action within national parks is identified, measured and evaluated and that measures are taken to reduce foreseen adverse impacts or to proceed with alternative actions.

3.1 Resource Protection

Natural resources within national parks will be given the highest degree of protection to ensure the perpetuation of a natural environment essentially unaltered by human activity.

3.2 Resource Management

3.2.1

Natural resources within national parks will be protected and managed with minimal interference to natural processes to ensure the perpetuation of naturally evolving land and water environments and their associated species.

3.2.2

An integrated natural resource data base will be developed and maintained for each national park.

3.2.3

Manipulation of naturally occurring processes such as fire, insects and disease may take place only after monitoring has shown that:

- i)there may be serious adverse effects on

neighbouring lands; or

- ii)public health or safety is threatened; or
- iii)major park facilities are threatened; or
- iv)natural processes have been altered by man and manipulation is required to restore the natural balance; or

- v)a major natural control is absent from the park; or

- vi)the continued existence of a plant or animal species, which is rare or endangered or which is critical to representation of the natural region, is threatened by a natural cause such as insects or disease; or
- vii)the population of an animal species or stage of plant succession which has been prescribed in the objectives for a park, cannot be maintained by natural forces.

3.2.4

Where active resource management is necessary, techniques will duplicate natural processes as closely as possible.

3.2.5

Resource management in each national park will take into account factors such as park size,

objectives, zoning, geographic location and the nature of activities occurring in surrounding areas.

3.2.6

Habitat critical to the survival of an animal or plant species or population may be provided by acquisition, agreement with other agencies or habitat manipulation within the park.

3.2.7

A species of plant or animal which has been native to, but which is no longer present in the park area, may be reintroduced:

- i) if the effect on other plants and animals is acceptable; and
- ii) if such action is compatible with park objectives; and
- iii) if such action does not pose serious problems for neighbouring land uses.

3.2.8

Non native species of plants and animals will not be introduced into a national park and, where they exist, efforts will be made to remove them.

3.2.9

Parks Canada will seek to eliminate or minimize sources of pollution affecting park resources. Where sources of pollution are external to the park, Parks Canada will work in co-operation with other responsible agencies.

3.2.10

Commercial exploration, extraction or development of natural resources will not be permitted in a national park.

3.2.11

Certain traditional extractive activities will be permitted in the following circumstances:

- i) In new national parks, guarantees will be provided so that certain traditional subsistence resource uses by local people will be permitted to continue in parts of national parks for one or more generations when such uses are an essential part of the local way of life and when no alternatives exist outside the park boundaries. These exceptions will be agreed to at the time of formal establishment of a new national park and will be outlined in the park management plan.

ii) Selected activities which are of cultural value in portraying to visitors traditional relationships between man and the land in the park area as part of the park experience may be permitted.

iii) In new national parks, the treaty rights of Indian people and those rights recognized in native land claims settlements will be honoured and extractive activities which are the subject of such rights can only be terminated after agreement has been reached with the people concerned.

iv) Controlled sport fishing of naturally regenerating populations of native species will be permitted.

All such activities will be subject to the requirement to protect the ecosystems and maintain viable populations of fish and wildlife species.

3.2.12

Places of national historic significance within national parks will be protected and managed according to the policies of national historic sites or national historic parks.

3.2.13

Significant archaeological resources in national parks will be protected.

3.2.14

Other historical and cultural resources within national parks will be protected:

i) when such resources are of particular significance and/or interest to the public;

and

ii) when public use and access can be controlled so that significant natural values are not impaired.

3.3 Environmental Assessment and Review

3.3.1

All developments, plans and management activities occurring on national park lands, including those proposed by agencies other than Parks Canada, will be subject to an assessment and review process which ensures that the environmental implications are fully considered in decision-making.

3.3.2

The process used for environmental assessment and review within national parks will be consistent with the Federal Environmental Assessment and Review Process (E.A.R.P.).

3.3.3

All products of the environmental assessment and review process including screening reports, initial environmental evaluations and environmental impact statements will be available for public review.

APPENDIX B

Parks Canada Policy, Ottawa, 1979

Canadian Landmarks, Sections 2, 3, 4, and 5

2.0 Protecting National Landmark Resources

Within national landmarks, resource management will be directed primarily at the protection and preservation of a single natural feature or phenomenon. Manipulation may therefore be required when natural conditions threaten to alter or eradicate the protected feature or phenomenon.

2.1 Resource Protection

Natural resources within national landmarks will be protected under the National Parks Act to ensure the perpetuation of the main landmark feature or phenomenon.

2.2 Resource Management

2.2.1

Natural processes will normally be allowed to proceed without interference unless monitoring has shown that:

- i) the main landmark feature or phenomenon is threatened; or
- ii) there may be serious adverse effects on

neighbouring lands; or

- iii) public health or safety is threatened.

2.2.2

Surface or sub-surface extraction of natural resources from within a national landmark will not be permitted.

2.2.3

Sub-surface extraction, from outside a national landmark, of natural resources located under the surface of the landmark will be permitted if the landmark will not be impaired as a result.

3.0 Public Understanding and Appreciation of National Landmarks

National landmarks will provide the public with unique opportunities to observe, learn about and appreciate Canada's natural heritage. Intensive use and development will not be appropriate at national landmarks because of their small size and unique features. Local communities adjacent to landmarks will be encouraged to provide accommodation and food services.

3.1 Visitor use

3.1.1

Parks Canada will provide for day-use activities which are a means for park visitors to appreciate and understand the unique natural sites and which are consistent with the protection of the landmark feature.

3.1.2

Interpretation, research and other educational uses will be encouraged at national landmarks.

3.1.3

Parks Canada will provide for those visitor activities which are dependent upon a landmark's natural resources and require a minimum of man-made facilities.

3.2 Visitor Services and Facilities

3.2.1

Parks Canada will ensure that those facilities and services essential for public understanding and appreciation of national landmarks are provided.

3.2.2

Controlled access will be provided if possible

to the main landmark feature. This will, in most cases, be by public transit or walking trails.

3.2.3

Facility development at national landmarks will be restricted to that required for visitors' basic needs and for interpretation and study purposes.

3.3 Information and Interpretation

3.3.1

Accurate information about national landmarks and the opportunities which they provide will be made available to the general public.

3.3.2

Interpretive programs will be provided to encourage an appreciation and understanding of the landmark.

4.0 Research

National landmarks are exceptional sites of high scientific value which offer excellent opportunities for research into natural features and processes. Management-oriented research will be also essential to identifying

potential national landmarks and planning for their protection and for public appreciation.

4.1

Parks Canada will encourage and conduct research necessary to identify unique natural areas of Canadian significance and to select national landmark sites.

4.2

Parks Canada will encourage and conduct research at a national landmark which contributes to an understanding of natural features and processes and to planning and managing the national landmark.

4.3

Parks Canada will co-operate with and draw upon the research of other government agencies, universities, non-governmental organizations and the knowledge of individual citizens.

4.4

Research information will be made available to the public and where appropriate, research activities will be demonstrated and

interpreted to enhance public understanding of the natural environment.

5.0 Management Plans

A management plan is a guide by which Parks Canada administers the resources and uses of a particular national landmark. It is an expression of Parks Canada's policies at the site level and, as a public document, it informs the public of the opportunities which are available to understand and appreciate the landmark and of the degree of protection which is necessary.

5.1

A management plan will be prepared for each national landmark as an expression of Parks Canada's policies and as a guide in the management of the site.

5.2

Opportunities will be provided for the Canadian public to participate in the planning of national landmarks.

5.3

The management plan and changes thereto must be approved by the Minister responsible for Parks Canada.

5.4

Parks Canada will co-operate with other levels of government, private organizations and individuals responsible for the planning of areas adjacent to national landmarks and for the provision of facilities and services in nearby communities to ensure that national landmarks are integrated in a positive manner into their surrounding regions.

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